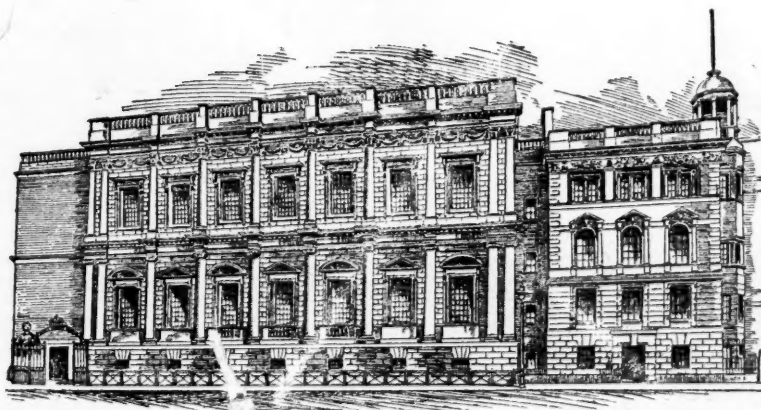


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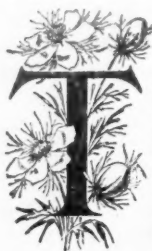
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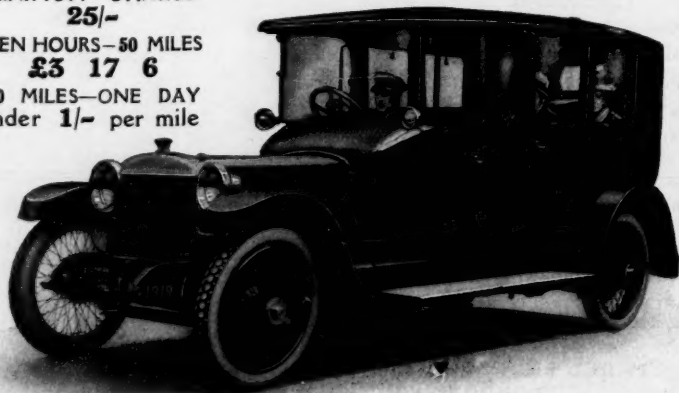
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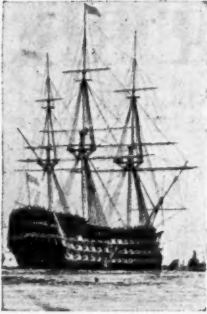
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They go back to their homes trained in some practical and profitable occupation, but the After-Care of these blinded soldiers is a matter of most urgent importance. It is necessary to watch over their handiwork, to help them purchase material, to keep them in touch with the best markets, and, above all, to see that their surroundings are happy.

An organization for this purpose has been established by The National Institute for the Blind. The work is being carried out in a way that is systematic, and, above all, sympathetic. Considerable funds are needed that this After-Care of the men who lost their sight in the War may never at any time be neglected.

The care of these men and their families is surely an object which cannot fail to appeal to those who wish to leave money in such a way that it will be of lasting benefit to a cause that is splendid.

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Registered under the War Charities Act, 1916.

FIVE REASONS WHY HELP IS STILL WANTED for ST. DUNSTAN'S

1. **New Arrivals.**—We had hoped that all the soldiers blinded in the War would have passed through St. Dunstan's before the end of 1920. Unexpectedly many other cases are coming to us—men whom blindness has gradually overtaken. They come from among the 23,000 men discharged with seriously damaged sight, the unfortunate ones whose vision has now failed. Other new arrivals are men whose blindness is not due to head wounds, but to constitutional causes—to tendencies that would probably have remained latent except for the hardships they have gone through.

2. **Difficult Cases.**—The last cases that came to us from the hospitals were naturally the worst. We have always had a number of these badly shattered men whose training must take an exceptional time. A man must be perfectly well to make a quick fight against the handicap of blindness, as the majority have so bravely done. The invalid needs constant rest, and this involves frequent starting again from the beginning. In general, the period required for re-education has grown longer. It is impossible to give the same individual attention to many hundreds of men as we could give to the earlier arrivals.

3. **The Housing Problem.**—One reason why many men are remaining longer at St. Dunstan's than we expected is that we cannot find for them the homes they require. We do not want men to make their new start, which must be under strange and trying circumstances, in any but the best conditions which can be secured.

4. **Increased Expenses.**—Both to maintain the men at St. Dunstan's and to set them up in their new work costs now at least double the amount it did before.

5. **The After-care of the Trained Men.**—Already some thousand blinded soldiers have left St. Dunstan's equipped to carry on the occupation they have mastered. They are scattered throughout the country. We keep in touch with them through our After-care Department, which is under the direction of one of the blinded officers. Experts visit the blinded men, giving them any encouragement or help they need in their work. We arrange for the purchase of materials at the lowest possible cost, and are watchful to ensure the best market for the produce of the home-worker.

A NOTE BY SIR ARTHUR PEARSON

It is some time now since the end of the War, and it is quite natural that people should be interested to know if their support of St. Dunstan's is still needed. The above statement answers that question. I want all the help I can get. We are more busy than ever. The same cheerful spirit still characterizes the blinded men at St. Dunstan's, and it is a cheering thought for the new arrivals that some thousand men are already mixing with the world as men who see without sight and are making good at their chosen occupations. I wish everyone might realize what it means to a blind man to be happily employed. At St. Dunstan's the blinded soldier learns to find his way in a world that has become suddenly darkened, he learns to read by touch and to write Braille, he is given a typewriter which he quickly masters, and he is trained in the work of his choice. Some become masseurs, some poultry farmers, others learn Braille shorthand in addition to typewriting, and so equip themselves for office work, and others become proficient in manipulating a telephone exchange. In the workshops we teach basket making, mat making, boot repairing, and joinery.

People who visit St. Dunstan's often forget that these capable men are blind. Well, it is certain that the men want to forget their blindness. Since the light does not reach them from outside they make pictures of things from within.

This is the brief note I have to make on the above statement, which I hope will enlist your help for St. Dunstan's.

ARTHUR PEARSON,

Chairman—Blinded Soldiers' and Sailors' Care Committee.

There is no better way of helping than by organizing concerts, bazaars, fêtes, and similar entertainments.

Contributions and donations may be sent to me or to the Treasurer, St. Dunstan's, Regent's Park, London, N.W.1.

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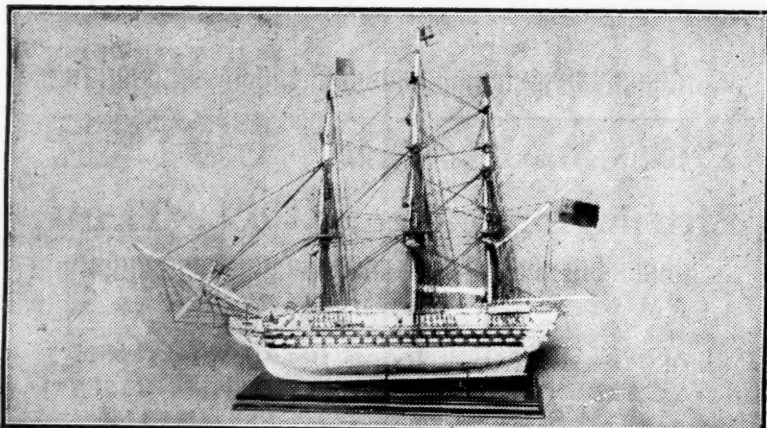
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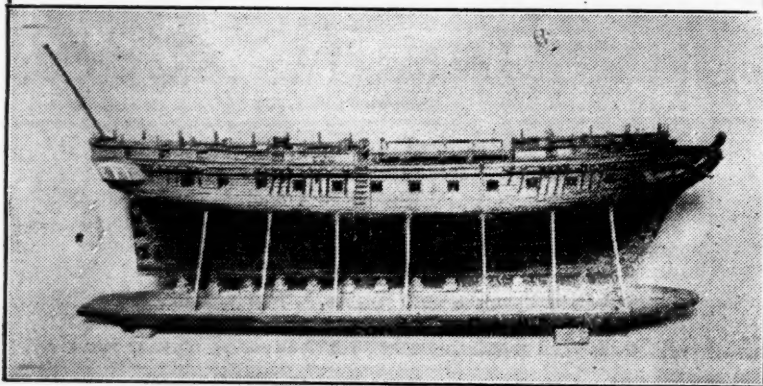
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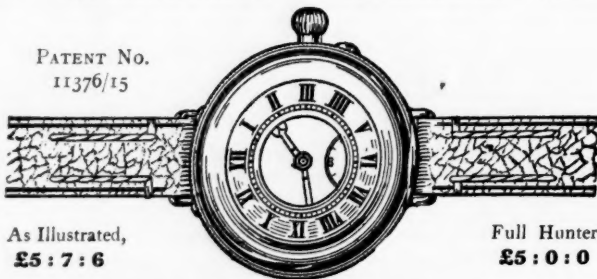
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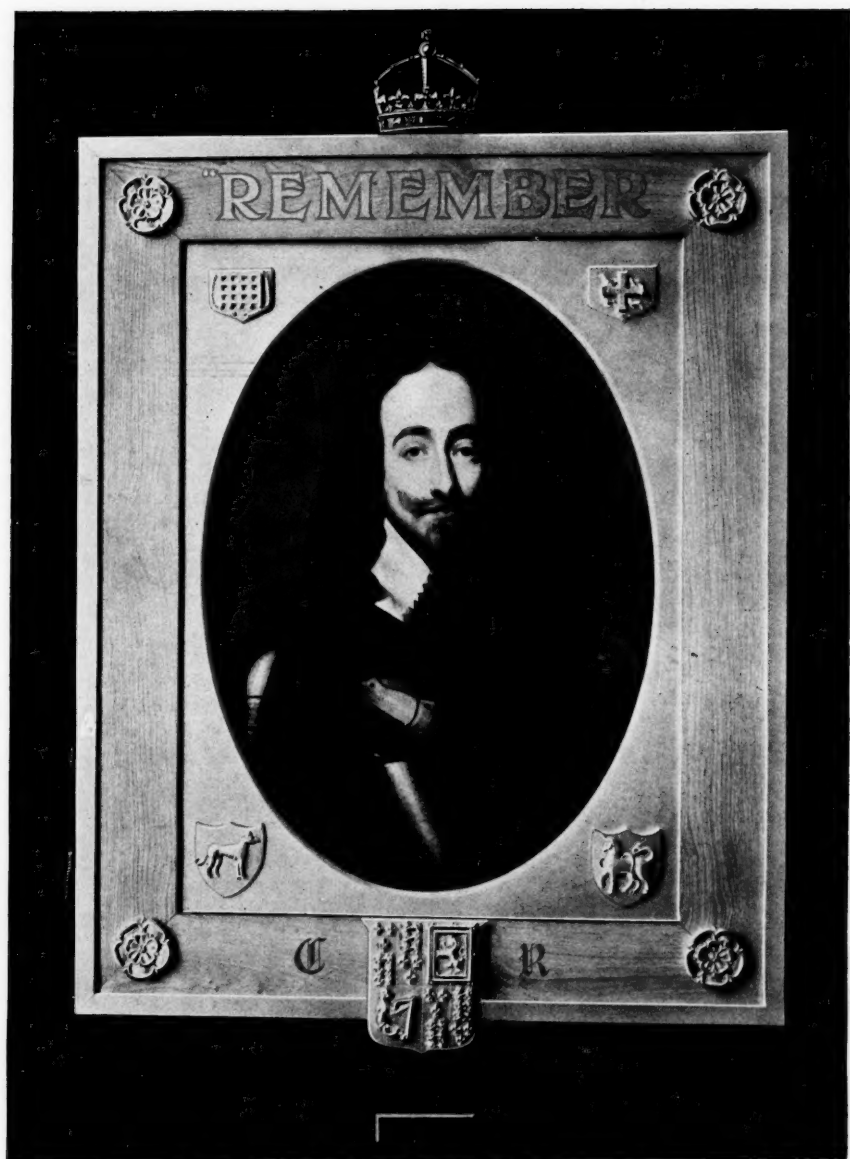
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SECRETARY'S NOTES.

I.—The President.

Field-Marshal H.R.H. The Duke of Connaught, K.G., etc., visited the Museum on June 25th, and inspected the Wolseley Memorial Room, with which he expressed himself highly pleased, as also with the general condition of the Museum.

II.—Officers Joined.

The following Officers joined the Institution during the months of May, June and July, viz. :—

Commander R. E. W. Kirby, D.S.O., R.N.
Lieutenant A. W. Schaeffer, K.R.R.C.
Sub-Lieutenant R. H. Donnell, R.N.
Captain W. R. E. Harrison, D.S.O., M.C., R.H.A.
Captain C. S. Field, Worcestershire Regiment.
Captain J. W. Hornby, M.C., 12th Lancers.
Captain H. N. J. Keene, M.C., R.G.A.
Lieutenant B. L. Lewis, late 6th Dragoons.
Major O. M. Lund, D.S.O., R.A.
Major W. F. Hanna, M.C., R.E.
Engineer-Captain H. Lashmore, C.B., D.S.O., R.N.
Captain F. G. Beaumont-Nesbitt, M.C., Grenadier Guards.
Lieutenant J. B. E. Hall, R.N.
Major B. L. Montgomery, D.S.O., Royal Warwickshire Regiment.
Lieutenant E. E. Mockler-Ferryman, R.H.A.
Captain R. G. Smithard, D.S.O., M.C., Shropshire Light Infantry.
Lieutenant L. J. Upton Way, late 4th (Reserve) Bn.,
North Staffordshire Regiment.
Captain B. H. Matheson, M.C., I.A.
Lieutenant F. A. M. Browning, D.S.O., Grenadier Guards.
Lieut.-Colonel R. S. Johnson, K.R.R. Cadets.
Captain D. A. Davison, O.B.E., Royal Irish Fusiliers.
Lieut.-Colonel T. B. Phillips, O.B.E., J.P., late 13th Hussars.
Major D. R. D. Fisher, D.S.O., R.F.A.
Captain C. E. E. Palin, I.A.
Captain J. O. C. Hasted, Durham Light Infantry.
Captain N. Underhill, R.G.A.
Major E. P. Quinan, I.A.
Captain T. E. G. Nugent, M.C., Irish Guards.
Lieutenant D. W. Granet, R.N.
Captain F. H. Wills, D.S.O., M.C., Irish Guards.
Lieut.-Colonel H. C. W. H. Wortham, C.M.G., D.S.O., Royal Irish Fusiliers.
Lieutenant W. M. Harrington, M.C., M.M., K.R.R.C.
Major A. G. Paterson, D.S.O., M.C., K.O.S.B.
Lieutenant J. Creswell, R.N.
Major R. Gale, D.S.O., M.B., R.A.M.C.
Captain E. J. Hobbs, M.C., Tank Corps.
Lieutenant H. L. Sherwood, Tank Corps.
Lieutenant C. A. P. Murison, R.F.A.
Major H. W. Tomlinson, R.E.

Captain D. Hughes, R.E.
 Major C. H. E. Moore, Wiltshire Regiment.
 Captain J. G. Deedes, M.B.E., R.E. (T.F.).
 Captain S. D. Graham, M.C., R.F.A.
 Lieutenant J. Brookes, Irish Guards.
 Captain G. B. Kay, M.C., 5th Bn. East Lancashire Regiment (T.F.).
 Major H. G. Seth-Smith, D.S.O., R.A.S.C.
 Lieutenant W. E. G. Williams, M.C., R.F.A.
 Captain P. M. C. Hayman, 5th Bn. East Lancashire Regiment (T.F.).
 Captain H. C. V. Porter, O.B.E., Leicestershire Regiment.
 Colonel W. M. Sutton, D.S.O., M.C., Somerset Light Infantry.
 Major C. W. Slaney, late R.M.L.I.
 Lieut.-Colonel J. Blakiston-Houstoun, D.S.O., 11th Hussars.
 Major C. R. I. Hull, D.S.O., O.B.E., R.A.S.C.
 Captain F. H. Maynard, Loyal North Lancashire Regiment.
 Captain P. de Fonblanque, D.S.O., R.E.
 Lieutenant E. Collins, 16th Lancers.
 Lieut.-Colonel G. M. Lindsay, C.M.G., D.S.O., Rifle Brigade.
 Captain A. F. R. Wiggins, Grenadier Guards.
 Major G. H. Bell, M.C., South Lancashire Regiment.
 Lieutenant J. G. Fortescue, Coldstream Guards.
 Lieutenant R. P. Minchin, R.G.A.
 Lieut.-Colonel Lord H. C. Seymour, D.S.O., Grenadier Guards.
 Lieut.-Colonel Hon. E. M. Colston, C.B., C.M.G., D.S.O., M.V.O., Grenadier
 Guards.
 Lieutenant Hon. F. H. Manners, M.C., Grenadier Guards.
 Lieutenant J. S. Cowie, R.N.
 Lieutenant N. McGavin, M.C., Royal Irish Rifles.
 Captain E. S. D. Martin, D.S.O., M.C., 5th Dragoon Guards.
 Lieutenant R. B. B. Wright, Grenadier Guards.
 Lieut.-Colonel J. R. Jelf, late R.E.
 Lieutenant H. P. Woodgate, Loyal North Lancashire Regiment.
 Captain W. Thomas, late Royal Welch Fusiliers.
 Lieut.-Colonel W. H. Hastings, D.S.O., I.A.
 Lieutenant W. A. Humphreys, 3rd (Reserve) Bn. Wiltshire Regiment.
 Captain E. M. Allfrey, D.S.O., Royal Berkshire Regiment.
 Lieutenant P. P. King, Gloucestershire Regiment.
 Brig.-General H. S. Rogers, C.M.G., D.S.O., King's Own Shropshire Light
 Infantry.
 Lieut.-Colonel A. B. Beauman, D.S.O., South Staffordshire Regiment.

III.—The Journal.

In view of the greatly increased and constantly increasing expenses of printing and postage, the Council are considering the possibility of effecting a reduction in the number of copies of the JOURNAL being printed and issued, and they ask Members to assist them in arriving at a decision, by informing the Secretary, at their earliest possible convenience, whether it is their wish that the JOURNAL should for the present be posted to them. In many cases several copies of the JOURNAL are being sent to Members who are serving in the same Regiments, Battalions and Ships.

IV.—Lectures.

Members desiring to deliver Lectures in the Theatre during the Autumn Session are requested to submit them for perusal of the Council through the Secretary.

V.—Gill Memorial Scholarship.

The Gill Memorial Scholarship at Brighton College was established in memory of Captain Gill, Royal Engineers, who was murdered in the Desert of Sinai on August 11th, 1882, and is for the benefit of the sons of Officers who are in reduced circumstances. Candidates require to be nominated by the Army Council for admission to a competitive examination, which is held from time to time when vacancies occur.

Full particulars as to the value of the Scholarship and Exhibition, the conditions of nomination and the examination may be obtained on application to the Head-master, Brighton College.

VI.—Letters.

Members are reminded that the Council can accept no responsibility in the matter of letters and telegrams addressed to them at the Institution, and no arrangements are made for the forwarding of Members' letters.

VII.—Life Membership.

The Council have recently communicated with all the Life Members (1,800) of over one year's standing, on the subject of their receiving the JOURNAL, with a view to reducing the number of copies to be dispatched, in order to effect a saving on the cost of printing, paper, postage, etc. Replies have been received from about three-quarters of such members, of whom 25 per cent. have intimated their willingness to forgo the same. Certain members have generously remitted donations towards defraying the extra cost of the publication, while a number have intimated their wish to do so. The Council will be glad to receive such donations for that object. A number of Life Members were found to be deceased.

VIII.—The Museum.

The amount taken for admission to the Museum during the past quarter was :—

£85 15 0 in May.
£79 12 6 in June.
£111 9 6 in July.

ADDITIONS.

- (7315). A small Statuette in cement of F.M. The Duke of Wellington in the full dress of his rank, richly coloured, executed about 1840.—Given by Major A. P. Ford-Moore, 10th London Regiment.
- (7316). Model of the Paddle Steamer "Trident." This vessel, owned by the General Steam Navigation Company, was built at Blackwall in 1841, length 192 feet, breadth (extreme) 28 feet, depth (extreme) 19 feet, 645 tonnage, and propelled by an engine of 130 horse-power. In 1842 H.M. Queen Victoria paid a visit to Scotland, travelling in H.M. sailing yacht "Royal George," which vessel was towed. On the return voyage to the Thames Her Majesty elected to travel by the "Trident," the latter ship flying the Royal Standard at the main, the Admiralty Flag at the fore, and a Vice-Admiral's Flag at the mizen, being in charge of naval officers for the occasion.
The Model, presented to Her Majesty by the Company, having been stored here since 1893, was repaired and re-rigged by Attendant J. Smith in 1920 and placed in the Museum.—Given by H.M. King Edward VII.
- (7318). Officer's Cap Plate of the 14th German Uhlans. The Regiment is a Hanoverian one and was formerly one of the King's German Legion and is wearing the British battle honours of Peninsula and Waterloo.—Given by Major F. G. Poole, D.S.O., O.B.E.

- (7319). Shoulder Belt Plate of the 76th Regiment.—Given by Major E. S. Jackson.
- (7320). Two Line Engravings (W. Hollar) of the Banqueting House in Whitehall.—Given by Captain S. McCance.
- (7322). A Coloured Engraving of F.-M. The Duke of Wellington, in antique gilt frame, which belonged to F.-M. Lord Wolseley; on the back in his handwriting is inscribed, "Bequeathed to me by Lord Airey who served under the Great Duke at the Horseguards. This is a good likeness of our Great Duke."—Bequeathed by the late Dowager Viscountess Wolseley.
- (7323). An Oil Painting of F.-M. The Duke of Wellington on his charger "Copenhagen," painted by H. W. Pickersgill, R.A. (1782-1875), who has written on the back of the picture, "The Duke of Wellington, a finished sketch for some of my large pictures." It was given to F.-M. Viscount Wolseley by the Right Honourable A. J. Mundella on January 1st, 1885. (Letter.)—Bequeathed by the late Dowager Viscountess Wolseley.
- (7341). A Duelling Percussion Pistol, which formerly belonged to Count C. J. Montholon, who was one of the Emperor Napoleon I.'s Staff Officers at St. Helena; he subsequently became the French Consul-General at New York. He gave this pistol to the donor's grandfather (William Timpson), as having belonged to Napoleon I. at St. Helena and brought from the Island by him.—Given by Captain Lawrence Timpson, late Hampshire Yeomanry.

WOLSELEY COLLECTION—*continued*.

(7202-7232). A Walnut Cabinet (No. 1) of the period of Queen Anne containing the following exhibits:—

1. A Silver-plated Horseshoe of Lord Wolseley's favourite charger "Greenfield."
2. Two Oak Paper Weights made from wood from the dockyard in Sebastopol, surmounted by grapeshot picked up in the Redan, 1855; formerly the property of Sir John Hall, K.C.B., Inspector-General of Hospitals.
3. A Brass Instrument used for branding deserters with the letter "D."
4. A portion of the Boer "Long Tom" Gun, destroyed by them to prevent capture at Komati Poort, September, 1900.
5. A piece of the Flag-staff of Fort Garry (now the City of Winnipeg), relieved by Colonel Garnet Wolseley in 1870, and given to the Field-Marshal by the Earl of Minto, Governor-General of Canada in 1900. Mounted on a silver base.
6. The Narrative of an expedition against the Rebel Chief Mayatoon in Burmah, 1853. The narrative gives an account of Lord Wolseley's first service under fire. The book is beautifully bound in calf.
7. A Box made from the binding of a book which belonged to Françoise de Brézé, daughter of Diane de Poitiers, and her husband Duc de Bouillon (1538), which accounts for the initials F.D.B., and the two D's crossed to form an H. (Henri II.), the cypher of Diane de Poitiers. In a note Lady Wolseley states:—"I bought this without any book in it, and to preserve it, had it made into a box."
8. A Copy of "Books and Bookmen" by Andrew Lang, dedicated to Lady Wolseley by the author. The book was bound by an amateur book-binder, Sir Edward Sullivan, Bart.
9. A Bronze Medal of Napoleon I. by Andrieu and signed by him. In circular wooden frame.

10. An old Ledger Book of Household Accounts of John Churchill, Duke of Marlborough, from 1695-1703, in green Morocco case, on which is inscribed :—" Given to Field-Marshal Viscount Wolseley by his wife, Christmas, 1908." It contains signatures of the Duke and Duchess of Marlborough.
 11. A Copy of Tennyson's " Queen Mary," beautifully bound in Morocco with an inscription. The binding was done by Sir Edward Sullivan, Bart., who gave it to Lady Wolseley in 1892.
 12. A small Manuscript Book containing quotations. It has an embroidered binding, and was designed and worked by Mrs. (Harriette) Morrell, and given by her to a dear friend, Louisa, Viscountess Wolseley, in 1907.
 13. A Crimson Velvet Box, with steel corners and hinges, with the following inscription inside :—" Made from a fragment from the Peer's Robe, worn by Edmund, 3rd Earl of Cork and Orrery, at the coronation of George IV., and given to Viscountess Wolseley by Eleanor Vere Boyle, July, 1911."
 14. A small Bronze Statuette of Napoleon I.
 15. A Crystal Ball mounted on an ebony stand, bearing the following inscription :—" This crystal ball was fired out of a cannon by the rebels at Lucknow at the relief of the Residency and fell amongst the 90th Regiment."
- Field-Marshal Sir Evelyn Wood, V.C., in a letter to the Curator, written a few days before his death, said, with reference to this ball, as follows :—" During the attack on Lucknow Major-General Sir Hope Grant was on horseback near the 90th Light Infantry, a unit of his command. The enemy, being very short of projectiles, fired pieces of chandeliers and other ornaments. This ball fell on soft ground close to the 90th, and was picked up by a corporal, who handed it to Captain Garnet Wolseley, who presented it on the spot to General Sir Hope Grant. It stood throughout Sir Hope's command at Aldershot on his dining table. When sitting at this table, he allowed Lady Grant to promise to leave it to me, for presentation to the Battalion ; eventually it was given back to Lord Wolseley, but I am now somewhat consoled by the thought that it is in your possession for the Institution's Museum."
16. A Lacquer Frame containing two Manuscript Letters. The first is written by Queen Victoria, in which she congratulates Sir Garnet Wolseley and his brave troops on their glorious success in Egypt. Dated October 30th, 1882. The second is enclosing the former, signed by Lady Ely and is sent to Lady Wolseley.
 17. A Blue Enamelled Vase with metal edges, which was taken from the Summer Palace, Peking, 1860.
 18. An Impression of the Seal of King George III.
 19. A Portrait of Major-General Charles Gordon, inscribed :—" Slain at Khartoum, January 26th, 1885." Framed in olive wood. At the back is an extract from a letter bearing Gordon's signature and saying :—" I am quite happy, thank God, and, like Lawrence, I have tried to do my duty." Above in Lord Wolseley's writing is written :—" The bravest comrade I ever had. He and Sir Hope Grant are, I feel sure, serving God in Heaven as loyally and effectively as they served Queen Victoria on earth."
 20. A Bronze Medallion of Queen Victoria, in wooden frame, and given by Her Majesty to Lady Wolseley shortly before her death.
 21. A Blue Enamel Vase, with inscription at the base, as follows :—" From the Summer Palace, Peking, 1860." The Chinese inscription is :—" Made during the reign of Emperor Kienlung, 1736-1796."
 22. A Lacquer Frame, containing a very small letter as follows :—" Khartoum, all right. 14. 12. 84. C. E. Gordon." The letter was brought to Lord

- Wolseley at Korti by an Arab, rolled up in the hem of his clothing, and was one of the very last messages General Gordon sent from Khartoum. Below is one of the notes issued by General Gordon in Khartoum for 10 piastres; it was found in the steamer in which Colonel Stewart was wrecked in September, 1884, just before he was murdered.
23. A Piece of Shell fired by the Boers at the Battle of Vaalkrantz, February 6th, 1900, mounted on oak surrounded by specimens of Boer ammunition.
 24. A Frame containing Pencil Drawing with Note by Lord Wolseley as follows :—" A sketch of places at the mouth of the Red Sea, drawn by Charlie Gordon during a conversation with me on Egyptian affairs in 1883."
 25. A Chinese Panorama, of views in Wu-Lin, with a note inside that it was picked up in the Summer Palace, Pekin, 1860.
 26. Queen Victoria's South African Chocolate Box, dated 1900. Given to Lord Wolseley.
 27. An Enamel Vase, given to Lady Wolseley by The Right Hon. W. E. Gladstone, with autograph letter inside.
 28. An Early Water-Colour Painting of Lord Wolseley at the time he joined the Army as an Ensign in the 80th Regiment. In gilt frame.
 29. A Miniature of Ensign Garnet Wolseley, dated 4th June, 1852, in the uniform of the 80th Regiment. Painted by McBride.
 30. A Pencil Drawing in frame, with the following inscription, signed by Lord Wolseley :—" A likeness of myself when 17 years of age, and drawn by myself."
 31. A French and English Grammar, dated 1817. The book has been perforated by a bullet, and inside is inscribed :—" This volume was the means of saving the life of Lieutenant Garnet Wolseley in the Crimean War in 1855," and signed by him. It is encased in a rich morocco box.
 32. A Frame containing Two Bank Notes, issued in Khartoum by General Gordon in 1884, and bearing his signature.
 33. A Paper Knife, made from oak of the 13th Century—used in building St. Patrick's Cathedral, Dublin. It was given to Lady Wolseley in 1898 and bears her initials.
 34. Insignia of the Legion of Honour of the Emperor Napoleon I.
 35. A curious Candlestick, made from a twisted bayonet.
 36. King Koffi's State Hat, brought from Ashanti in 1873 by Sir Garnet Wolseley. It has eight panels of gold and a similar number of silver.
 37. A curious Instrument overlaid with gold and forming a rattle. Brought from King Koffi's Palace in 1883.
 38. An Ancient Copy of the Koran, from the Upper Swat Valley, which was given to Lady Wolseley by Lieut. G. de Heries-Smith, A.D.C. to Sir W. Lockhart in 1898. In green Morocco case.
 39. A Photograph of Miniature of General Robert E. Lee, U.S.A. On the back is inscribed :—" To Lady Wolseley, this picture of her father from Mary Curtis Lee. July 30th, 1912."
 40. The Original Sketch, made by Pelligrini, of Lord Wolseley in 1894 for the caricature which appeared in "Vanity Fair."
 41. A small Book, with passages from the Koran, which belonged to Arabi Pasha. It was sent to Lady Wolseley by Sir Garnet Wolseley in 1882 and is beautifully encased in Morocco box.
 42. Shoulder Belt-Plate of the rank and file of the 90th Light Infantry.
 43. A China Dish with Cover, which was made for King Frederick the Great. Given to Lord Wolseley by Colonel Kirkwood in September, 1895. In the Hohenzollern Museum in Berlin there are specimens of this same china. Inside the dish is a full description of it.
 44. Two Brown Pottery Mugs, of the pattern distributed to the Russian peasants at the Coronation Feast in the Petrofski Palace, 2nd June, 1883.

(7233). A Large Lacquer Case (No. 3), containing the late Field-Marshal Viscount Wolseley's Medals and Decorations :—

1. General's Sword and Scabbard used by Viscount Wolseley, K.P., G.C.B., O.M., G.C.M.G. On the right side of the blade is the following inscription :—" From Her Majesty Queen Victoria to the King of Ashantee." On the left side :—" Major-General Sir Garnet J. Wolseley, G.C.M.G., K.C.B., from the Officers of his Staff, Coomassie, February 4th, 1874." (In F.-M.'s Uniform Case.)
 2. Field-Marshal's Baton bearing the following inscription on its base :—" From Her Majesty Alexandrina Victoria, Queen of the United Kingdom of Great Britain and Ireland, to Field-Marshal the Right. Hon. Garnet Joseph Viscount Wolseley, K.P., G.C.B., G.C.M.G."
 4. The Collar with Badge of the Order of the Bath.
 5. The Insignia, Badge and Ribbon of the Order of the Bath.
 6. The Collar of the Order of St. Patrick with Jewel (replica).
 7. The Insignia and Ribbon of the Order of St. Patrick.
 8. The Collar and Badge of the Grand Cross of the Order of St. Michael and St. George.
 9. The Insignia and Ribbon of the Order of St. Michael and St. George.
 10. The Insignia, Cross and Ribbon of the Order of the Red Eagle.
 11. The Insignia and Badge in diamonds with Ribbon of the Order of the Osmanieh; presented to Viscount Wolseley personally by the Sultan of Turkey.
 12. The Insignia and Badge of the Order of the Osmanieh.
 13. The Order of Merit with Ribbon.
 14. The Gold Medal with Ribbon commemorating the Emperor of Austria's Jubilee.
 15. The Gold Medal with Ribbon of the Order of Danilo, conferred by the King of Montenegro.
 16. King Edward VII. Decoration for long service in the Volunteers.
 17. Coronation Medal of King George V.
- 18-31. Brooch containing the following Medals and Decorations :—
- Queen Victoria's Jubilee Medal for 1887, with Clasp for 1897.
 - Coronation Medal of King Edward VII.
 - The Indian General Service Medal, with Clasp for Pegu.
 - The Crimean Medal with Clasp for Sevastopol.
 - The Indian Mutiny Medal with two Clasps for the Relief of Lucknow and Lucknow.
 - The China Medal with two Clasps, for Pekin, 1860, and Taku Forts, 1860.
 - The Ashanti Medal with Clasp for Coomassie.
 - The Zulu Medal with Clasp, 1879.
 - The Egyptian Medal with Clasps, for Suakin, 1885, the Nile, 1884-1885, and Tel-el-Kebir.
 - The Canadian Medal with the following Clasps :—Fenian Raid, 1866; Fenian Raid, 1870; and Red River, 1870.
 - The French Legion of Honour.
 - The Medjidie Badge.
 - The Khedivial Star.
 - The Turkish Medal for the Crimea.
32. A Row of Eight Miniature Orders on Brooch.
 33. Miniature Medal of King George V. Coronation.
 34. A Gold Chain with Six Miniature Decorations, which was presented to Viscount Wolseley by King Edward VII.

(7234-7253). A Walnut Cabinet (No. 2) of the period of Queen Anne, containing the following exhibits :—

1. An Arabic Letter in frame, picked up on the Battlefield of Abu-Klea, February 17th, 1885. It is from Mohammed the Mahdi to his Beloved, and is dated 24th November, 1884. At the back of the frame is a translation of the letter.
2. An Arabic Letter in frame, from Mohammed El Khier, Emir of Berber, giving an account of the capture of Khartoum and the death of General Gordon (the accursed). Picked up on the Battlefield of El Kirbek, February 11th, 1885. It was found by a soldier of the Cornwall Light Infantry in a donkey's saddle bag.
3. An Arabic Letter in frame, picked up on the Battlefield of Abu-Klea. It is written by the Governor of Berber, and in which he calls together each portion of the people who fought at Abu-Klea on the 17th January, 1884. The translation is at the back.
4. An Arabic Letter in frame, written by Osman Digna, in which he urges the carrying on of the war. The translation is at the back.
5. A piece of Oak of H.M.S. "Victory," with the correspondence as to its identity.
6. A Pen and Ink Drawing, by Lord Wolseley when a boy, of his brother Dicky, dressed as a Grenadier.
7. A Native Gourd with portrait of Lord Wolseley on it. From Ashanti.
8. A Crude Earthenware Figure of Lord Wolseley mounted on a white horse.
9. A Silver Coffee Pot, richly embossed, of the period of George III., engraved :—"King Koffi's Coffee Pot, Coomassie, 4th February, 1874."
10. A Silver Milk Jug of George III. period, bearing Lord Wolseley's initials and crest; used by him when he was a child.
11. A Silver Spoon with Lord Wolseley's initials on it, George III. period, engraved :—"Christening spoon of Field-Marshal Viscount Wolseley."
12. A Russian Silver Bowl, Stand and Spoon, inscribed :—"Given by H.I.H. the Duchess of Edinburgh to Field-Marshal Lord Wolseley."
13. A small Turkish Dagger. The blade is damascened with gold. The handle is of ivory with silver mounts.
14. A finely-Carved Jade Bowl. At the bottom it is inscribed :—"From the Summer Palace, Pekin, 1860. Lieutenant-Colonel G. J. Wolseley."
15. A small round Oak Box inscribed :—"Part of old Windsor Castle built by William the Conqueror in the year 1068."
16. A large Silver Box from Ashanti, much embossed and engraved. The silver was obtained from beaten coins.
17. A curious Chinese Picture. It was taken from a temple in which Lord Wolseley stabled his horses before Pekin in 1860.
18. A small Water-colour Sketch signed by Lord Wolseley, dated 10th July, 1857, of the Hospital at Singapore, where three companies of the 90th Light Infantry were quartered after the wreck of H.M.S. "Transit."
19. A Water-colour Sketch of the wreck of H.M.S. "Transit," 10th July, 1857, which had on board three companies of the 90th Light Infantry, one of which was commanded by Captain G. J. Wolseley.
20. A Book of Photographs taken by Lord Wolseley during his journey on King Edward VII.'s Accession Tour in 1901.
21. A pair of Fighting-cock Spurs, with saw used in cutting off the cock's natural spurs.
22. An Earthenware Quart-jug with portrait of Sir Garnet Wolseley on both sides.

23. A large Earthenware Mug, commemorative of the birth of Prince Edward of York, 1894. On the silver band round the edge is engraved :—" Given to Louisa, Viscountess Wolseley, at Sandringham, by H.R.H. Duke of York, now King George V., on the birth of his eldest son."
 24. A Leather Two-thonged Whip. History unknown.
 25. A pair of Queen Victoria's Jubilee Mugs, 1887.
 26. A Green Morocco Case inscribed :—" Sinn Fein Rebellion, 1916," containing a Cap-badge of the City of Limerick Regiment " Irish Volunteers." The Regiment surrendered to Lieut.-Colonel Sir A. A. Weldon, Bart., C.V.O., D.S.O., commanding the troops at Limerick, 5th May, 1916.
 27. A Gilt Frame, surmounted by the Imperial crown of Austria in enamels, containing a portrait of the Emperor Francis Joseph in the uniform of the King's Dragoon Guards. On the back is inscribed :—" Presented by H.I.M. Franz Josef to His Excellency Field-Marshal Viscount Wolseley, on the occasion of his visit as Ambassador Extraordinary to the Austrian Court to announce the accession of H.M. Edward VII., 1901."
 28. Two Copies of the Coronation Service of King Edward VII., richly bound in calf.
 29. A Signed Portrait of H.M. Queen Victoria, in olive wood frame. At the back is recorded :—" This portrait was given by H.M. Queen Victoria to Viscountess Wolseley in 1885." The inner frame, which is of metal and brocade, was the original one.
 30. A Case containing two small French flint-lock Pistols, made by F. Bertheas fils et Cie, St. Etienne.
 31. A piece of Wood, which formed part of a boat used in the Red River Expedition in 1870.
 32. A piece of Wood taken from Fort Paul, Sebastopol, 9th September, 1855. The fort was blown up shortly afterwards.
 33. A Case of Mathematical Instruments. Inside is inscribed :—" November 17th, 1880. This box was given to George Howard, 9th Earl of Carlisle, by his aunt, Lady Lanerton. It belonged to her mother the Honorable Mrs. George Ponsonby, to whom it was left by Lady Beauclerk, daughter of the 3rd Duke of Marlborough. The box belonged to John Churchill, the Great Duke of Marlborough, and contains the instruments with which he made his plans for his various campaigns." Outside the case are the arms of the Duke of Marlborough.
 34. A piece of Tin with the name " Havelock " punched into it. Havelock was originally buried within the walls of the Alum-Bagh, and this piece of tin was nailed to a tree beside his grave and marked the spot. It was afterwards sent to Lord Wolseley by a soldier who had taken it from the tree.
- (7254). A Court Sword made at Toledo in 1868, with embossed gilt handle and engraved blade. It was given to Lord Wolseley by General Lord Airey, who was Adjutant-General of the Forces.
- (7255). An Officer's Dress Sword of the 90th Light Infantry, worn by Lord Wolseley when in that regiment.
- (7256). An Ebony Walking-stick with gold top marked 6 ounces 9 pennyweights 12 grains. On the ferrule, which is of gold, is inscribed :—" Facsimile of ' Goldstick ' Royal Horse Guards (Blues) made for Field-Marshal Viscount Wolseley, Colonel of the Regiment, 1906."
- (7257). A curious heavy Walking-stick (red ivory). The handle has three heads to it. On a silver band is inscribed :—" Wolseley—Zulu."

- (7258). A Zulu Knob-kerry. On the silver band is inscribed :—" Wolseley—Zulu."
- (7259). A long Walking-stick with a circular handle. On the silver band is inscribed :—" Wolseley—Zulu."
- (7260). A long rough Wooden Stick. On the silver band is inscribed :—" Wolseley—Zulu."
- (7261). A curious Walking-stick brought by Lord Wolseley from Ashanti. On the top is inscribed :—" Coomassie 1874: Natural growth of tree and creeper."
- (7262). A Walking-stick brought from South Africa by Lord Wolseley, with silver band marked :—" Wolseley."
- (7263). A Malacca Cane with gold head. On the top is inscribed :—" King Koffi's stick, Coomassie 1874." and round the side :—" General Sir G. J. Wolseley."
- (7264). A Bannerette which was one of four on Field-Marshal the Duke of Wellington's funeral car. It was given by the second Duke to Lady Dorothy Nevill, who gave it to Field-Marshal Lord Wolseley.
- (7265). The Original Sketch for "Punch" drawn by Linley Sambourne, August, 1895, entitled "En route for the Horse Guards." It is a caricature representing H.R.H. the Duke of Cambridge leaving the Horse Guards and Lord Wolseley coming in, and Mr. Punch as sentry.
- (7266). The Original Sketch for "Punch" by Linley Sambourne, dated August 24th, 1900, entitled "Bowling them over." In the sketch Lord Wolseley is depicted bowling over Field Officers with the ball of reprimand.
- (7267). The Original Plaster Bust of Field-Marshal Viscount Wolseley, executed by Sir Edgar Boehm. The pedestal is by the same sculptor.
- (7268). A Walnut Wall Case (No. 2) containing the Field-Marshal's uniform worn by Lord Wolseley. (The Field-Marshal's sword described on No. 7233 label is in this case.)
- (7269). An Egyptian Regimental Colour taken at the Battle of Tel-el-Kebir, September 13th, 1882, and retained by Lord Wolseley as Commander-in-Chief.
- (7270). Union Jack with the Royal Arms in the centre. It was Lord Wolseley's Headquarter Flag during his South African campaign, 1879.
- (7271). A Specimen of the Souvenir Handkerchiefs which were sold in the streets of London on the day of Field-Marshal Lord Wolseley's funeral. The date of his birth is not correctly stated, as he was born on June 4th, 1833. In wooden frame.

NOTE.—The list of the remainder of the collection will appear in the following JOURNALS.

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SECOND MILITARY PRIZE ESSAY FOR 1919.

Subject:

"THE APPLICATION OF RECENT DEVELOPMENTS IN MECHANICS AND OTHER SCIENTIFIC KNOWLEDGE TO PREPARATION AND TRAINING FOR FUTURE WAR ON LAND."

By BREVET LIEUTENANT-COLONEL W. D. CROFT, C.M.G., D.S.O.,
The Cameronians (Scottish Rifles).

Motto.—"Celer et audax."

INTRODUCTION.

PART I.—THE PAST AND THE PRESENT.

The period before the Great War.

The Great War.

- (1) Men.
- (2) Horses.
- (3) Weapons.
 - (a) Artillery and Smoke.
 - (b) Gas.
 - (c) Machine Guns.
- (4) Roads.
- (5) Mechanical Transport and Tanks.

PART II.—THE APPLICATION OF TANKS TO THE BRITISH ARMY.

The problem of the Post-Bellum Army.
The Tank of the Future.
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The absorption of the Machine-Gun Corps.
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The Application of Tanks to First Line Transport and Train.
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I.—*Tactics.*

The move forward from the area of concentration.
Protection.
Information.
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The Counter-Attack.

II.—*Training.*

Training Areas.
Infantry Training.
Artillery Training.
Fighting Tank Training.

INTRODUCTION.

Von der Goltz, in his introduction to "The Nation in Arms," has made the following prophecy:—

"Looking forward into the future, we seem to feel the coming of a time when the armed millions of the present will have played out their part. A new Alexander will arise who, with a small body of well equipped and skilled warriors, will drive the impotent hordes before him"

At the present time there are only two nations, among all the first-class Powers, who have definitely rejected universal service.

Germany is committed to a voluntary army owing to pressure from without, while Great Britain has adopted a similar policy owing to pressure from within.

It is of vital importance to these two nations to organize a "body of well-equipped and skilled warriors" in such a manner that equipment and skill shall redress the balance of those "armed millions."

In 1914 the British Expeditionary Force demonstrated the possibilities of highly-skilled troops when pitted against overwhelming odds.

In 1918 the British Army was the best equipped army the world has ever seen.

In addition, the British Army had added to its equipment a weapon against which troops, even though assisted by the most up-to-date armaments and field fortifications, were comparatively defenceless.

In this essay it is proposed to deal principally with the future possibilities of the tank and its applicability to the British Army, since that army was the pioneer of the tank, achieved far greater results with it than any other nation, and is still far ahead of any other nation in design and construction.

Lack of space and the writer's conviction of the overwhelming superiority of the tank over any other mechanical invention or scientific discovery, in future war on land, preclude detailed discussion of anything else except in so far as it can be utilized with the tank.

It is proposed to divide the subject into three parts under the following headings:—

Part I.—The Past and the Present.

Part II.—The Application of Tanks to the British Army.

Part III.—The Tactics and Training of a Tank Army.

PART I.—THE PAST AND THE PRESENT.

Without the experiences of the past it is impossible to theorize about the future. The application of mechanics and other scientific knowledge to war is almost as old as war itself.

The earliest and, at the same time, one of the most striking instances of such application, is furnished by the defence of Syracuse.

On this occasion, thanks to the mechanical appliances of Archimedes, the town of Syracuse was enabled to offer a stout and prolonged resistance to the all-conquering Romans, although the fighting spirit of the citizens was lacking.

The military student can learn two lessons of great value from the defence of Syracuse.

The first is that the moral effect of mechanics and other scientific inventions is greater than any material effect, however overwhelming the latter may happen to be, especially if the invention can be sprung upon the enemy in the nature of a surprise.

The second is that no amount of mechanical or scientific ingenuity will save the nation which is content to rely entirely on such aids, and which neglects its military responsibilities, from being overwhelmed by a virile and aggressive foe sooner or later.

In wars of the past the soldier has always been concerned with four main military problems, namely, men, horses, weapons and roads.

With regard to men: until the introduction of universal service man-power was of comparatively minor importance, because the supply was usually greater than the demand.

It was the same with horses, the supply, thanks to the universal demand made upon it for commercial purposes, being practically unlimited.

With regard to weapons: their limitations and general primitiveness caused the battles of other days—even as late as 1866—to be much more of the nature of individual combats than was the case after the introduction of rifled weapons and smokeless powder.

As regards roads: the movements of armies in former times were generally limited by the lack of them, and it was not until Napoleon's time that we find roads made, and used, for the special purpose of speeding up the concentration of his (for those days) vast armies.

In that bow and arrow period muscle was all that mattered in war, mechanics were of small account.

Modern war, as we know it with all its complex machinery, was introduced in the South African War of 1899.

For in this war the modern machine gun, with few modifications the same weapon which created such a stir in the Great War, the pom-pom and quick-firing mobile artillery caused us to assume those wide extensions which is the first instance in modern war of those oft repeated attempts to economize man-power.

Also, for the first time in history, the supply of horses was barely equal to the demand, no matter for what reason.

It was in South Africa that the first attempt at mechanical transport, in the shape of traction engines, was made.

The lessons learnt in the South African War were of incalculable value to us, though their value was lost sight of by other civilized nations, as was instanced in the terrible muddle which the Germans made of their campaign against the Hereros shortly afterwards.

The Russo-Japanese War showed us the difficulties of concentration of modern armies provided they relied entirely on roads and railways, the terrible effect of machine guns on troops in close order—we had discovered this years before in our encounters with uncivilized troops who charged home—and the marked superiority of the Russian quick-firing artillery over the less modern equipment of the Japanese on the few occasions when the Russians used these weapons properly. That war furnishes some remarkable instances of the folly of insufficient training in a new weapon.

This often results in the weapon being condemned on the first occasions on which it is tried in battle, when all the time it is the man, and not the weapon which is to blame.

"Bad workmen always blame their tools," but nowhere more than in the case of a soldier and his weapons.

In discussing the Great War, the writer proposes to examine it from the point of view of the British Army for the most part, since it was the army which was called upon to improvise man-power, horses, weapons and mechanical transport to a far greater extent than the armies of its Allies, or of its opponents, and since it was able to produce, as the result of such improvisation, the finest war machine that the world has ever seen. These four fundamental problems—men, horses, weapons, roads—with the addition of mechanical transport, under which will be included tanks, will be briefly discussed under separate headings.

MEN.

Among the anomalies caused by static warfare on the Western Front the diversity of battle order for infantry is worth mentioning as having an important bearing on the subject of this essay.

For instance, the battle order for a raiding party only consisted of weapons and, in some cases, football kit, because it was realised that speed minimized casualties when crossing over to, and returning from, the hostile trenches, and that it was essential for the infantryman to have free use of his weapons, so as to give him every chance in the inevitable hand-to-hand encounter.

But, on the other hand, when it came to a set-piece battle where the infantry held on to their objective, the men were asked to carry as much as 70 lbs., because there was no other way of getting the stuff across.

The set-piece assault was usually successful, since the artillery support was so overwhelming that hand-to-hand encounters were the exception rather than the rule.

It is no exaggeration to say that when the men were loaded up, like pack animals, not more than twenty-five per cent. of them were fit to take part in a hand-to-hand encounter on reaching the final objective.

Sheer physical fatigue and inability to use their weapons had almost as much to do with the success of a well-timed counter-attack as the moral effect of such an attack.

Towards the close of the Great War tanks were just coming into use for the purpose of carrying some of the infantryman's burden. There is no doubt that if we can take the weight off the infantryman, and increase his speed, we shall get such an increase in fighting value as to make it possible to introduce radical changes in tactics.

At the commencement of the War it was considered that cavalry, trained on the model of Frederick the Great, which demanded the most expert horsemanship and horsemastership in order to charge rapidly and with precision at any given point in large masses, would still obtain opportunities for utilizing such training, even without the leadership to make those opportunities.

The failure of Napoleon's cavalry tactics at Waterloo was explained away by the fact that the ground was too heavy, the slope of it against the charge, and the whole condition of the horses too low for the exertion demanded of them.

In the American Civil War the failure of cavalry to repeat past exploits was attributed to their lack of training and to the absence of a Napoleon to create by his skill the opportunity for decisive cavalry action.

The same reasoning explained away the comparative failure of the cavalry in the European campaigns of 1866 and 1870, the result being so small in proportion to the number of squadrons available, and to their cost of maintenance in comparison to other arms.

Finally, the Cavalry School reasoned that in no single campaign, since Napoleon's time, have the conditions governing campaigns been normal. Either a deficiency of roads had precluded the rapid marching, which formed the basis of all modern strategy, as in America, Turkey, South Africa and Manchuria, or the relative power of the infantry and artillery, as in 1866 and 1870, had rendered wholly impossible the creation of the great tactical opportunity characteristic of Napoleon's method, for there then existed no means of overwhelming the enemy.

with a sufficient hail of projectiles to render the penetration of cavalry feasible.

But now quick-firing guns had enormously facilitated the attainment of this primary fire superiority, and, moreover, it had simplified the procedure to such a degree that a Napoleon was no longer needed to direct.

The battles of the future would thus, in civilized countries, revert to the Napoleonic type, and the side which possessed the most highly trained and mobile force of cavalry would enjoy a greater relative superiority over its opponent than at any period since the days of Frederick.

Unfortunately, the adherents of cavalry shock action, in their whole-hearted belief in the capabilities of that arm, would appear to have neglected a very important lesson which can be learnt by studying the campaigns of the Great Frederick.

Owing to the brilliant successes gained by the Prussian cavalry at Rossbach and Zorndorf their adversaries completely altered their tactics.

They now utilized their enormous numerical superiority by dividing up their forces into two separate armies.

When the Prussian army moved against either, the threatened force immediately threw up heavy entrenchments, against which cavalry were, of course, ineffective.

At the beginning of the Great War cavalry were restricted in their movements by machine guns, wire, and trenches.

It was found that a cavalry patrol, of which each horse was called upon to carry at least twenty-one stone, was tied to the roads in anything approaching a close country.

Under these circumstances a well-concealed machine gun, trained to fire down the road along which the patrol must come, with flanks well protected by hedges and ditches—impassable obstacles to horses carrying twenty-one stone—could hold up a patrol for quite an appreciable time, making it necessary for the patrol to dismount and out-flank the machine gun on foot, and so lose precious time and render their report valueless.

But that shock action which the "cavalry" school had promised us never took place on the Western Front—the one front, as this school had repeatedly assured us, where the conditions of cavalry action would be normal.

Destructive criticism is easy enough, and it is easy to be wise after the event; but the fact remains that on the Western Front, on terrain selected by its adherents, cavalry failed to justify its existence.

Turning to other fronts, we can make a similar assertion until 1918. In that year, when the final advance was made through Palestine, we have been furnished with examples of cavalry leading which are incomparable in history.

But here again we are forced to criticise.

The Turks by this time were demoralised, the time was ripe for pursuit, and there was practically no resistance to the cavalry.

That, of course, only goes to show how well timed the intervention and subsequent rout of the enemy must have been.

Quite so; but it is not unreasonable to argue that had the Turks displayed any fight at all, and had their machine guns been properly organised in depth, as they most certainly were not, the cavalry would not have broken through.

HORSES.

As a result of the South African War, the need for a mobilization scheme for horses was realized by Britain in time to put the machinery in working order when war broke out in 1914. Even then it was found necessary to have buyers in all the principal horse countries of the world, and after the second year of the war the horse-power problem was becoming acute.

The Report of the Supply of Horses for Military Purposes Committee, dated January, 1916, makes interesting reading.

This committee was composed of the best known breeders and landed gentry in the British Isles, and this gives added weight to the opinions expressed in the report.

In paragraph 59 of the Report it says:—

"The present method of buying remounts gives no encouragement at all to the breeder . . . and if the Government want farmers and others to breed horses suitable for remount purposes the Government must in some way make it profitable to breeders to do so."

But the Report's reference to the artillery horse situation is even more significant.

In paragraph 61 it states:—

"We consider the encouragement of the breeding of horses suitable for artillery and light draught to be of the utmost national importance, bearing in mind the fact that on mobilization a larger quantity of these horses is required than of the riding type."

"This type of horse, *i.e.*, one weighing from 1,200 to 1,400 lbs., from 15-2 to 15-3, on short, clean legs, with deep, well-placed shoulders, short back, and quick, well-balanced action has always been hard to find, but of late years, owing to the replacement of all omnibus horses and many vanners by motors, it is rapidly becoming extinct."

If that were the case in 1916, what was the situation at the end of the War?

That question can be answered by every C.R.A. in France, and it is to the effect that the gun horse at the end of the war was not up to the work required of it, because the Remount Depots were unable to supply the stamp described in the report quoted above.

Tradesmen of all degrees are daily replacing their horses by mechanical transport.

In the agricultural districts the same thing is going on, though to a much lesser degree.

For the War has proved to the farmer that tractors and light lorries are more profitable to use than horses, though horses will be used on

the farm to work in with mechanical transport. When hay is soaring up to £17 a ton,¹ and with oats worth their weight in gold, the demand for horses will not be great; and since the demand creates the supply, the type of horses suitable for artillery and light draught will eventually become as rare as the North American bison.

WEAPONS : (a) ARTILLERY.

1915 was a year of growth, training and experiment, for though several battles were fought, beginnings only were made in many things as the result of experience which came to fruition in later years.

The most important changes were three, namely :—

Barrages from field artillery as covering fire, had replaced the rifle as covering fire.

The standard of rifles to guns was replaced by yards to guns.

There was a marked development in counter-battery work and artillery intelligence.

1916 saw the introduction of the creeping barrage.

At first, the pace of this creeping barrage went much too quickly for the heavily loaded infantry under existing conditions.

But when, later on, the barrage was retarded and the infantry were taught to get up close to it, frontal attacks against uncut wire and machine guns were frequently successful, provided a limited objective only was aimed at.

The number of batteries of heavy artillery, consisting for the most part of 6-inch howitzers, 8-inch howitzers, and 9.2-inch howitzers, employed in the Somme Battle, was without precedent in the history of war.

No longer did the infantry support the attack by their own fire.

The infantry were only asked to move, the artillery did the rest.

But this tremendous artillery support caused the supply of ammunition to be the controlling factor in limits of movement, and it led to the introduction of light railways.

When the Germans withdrew to the Hindenberg Line, early in 1917, the British had some practical experience, which was afterwards of the greatest value, in the possibilities of heavy artillery in open warfare.

The chief object of the German withdrawal was to force the British to fight without the support of their heavy artillery, which, the Germans calculated, would have very great difficulties in crossing the devastated area.

As a matter of fact, the heavy artillery, thanks to its mechanical transport, was even more mobile over that shell-pitted swamp than field artillery.

During the third battle of Ypres the British forced the Germans to change their tactics no less than three times, viz. :—

(a) At the beginning of the battle the Germans held an outpost system with a main line of resistance (known as the "artillery protective line") approximately 2,000 yards in rear, the whole system stiffened by "pill boxes."

¹ Note.—This was written in October, 1919.

As soon as the British infantry arrived on their objective, tired and disorganized, the Germans attacked them with fresh divisions brought up from long distances in rear by mechanical transport.

The British answer to that was to arrange a carefully thought out protective barrage for the final objective and to turn every long range gun—railway guns for the most part—on to reinforcing troops coming up from the back areas before they deployed; the R.A.F., of course, giving the targets.

(b) The Germans then stuffed their front line system full of men and machine guns, concealing their dispositions as much as possible.

This caused the British to revert to the heavy concentration of artillery on this front system.

(c) Which again caused the Germans to change their tactics by abandoning their outpost system altogether, when an attack seemed imminent, by means of a preconcerted signal.

Then, as soon as the outposts had been given sufficient time to come in, they brought down their barrage on the line just vacated by their own men.

These tactics met with a certain amount of success, sufficient to cause the Germans to make no further radical changes for the rest of the war.

The British reply to this new departure was to quicken up the pace of the assaulting infantry in the early stages of the advance.

The battle of Cambrai, in 1917, is a classic instance of strategic surprise, made possible by tanks, and by the introduction of the un-registered barrage.

All through the war the counter-battery work had been getting better and better; this culminated in the British offensive of August, 1918, when among the large number of pieces captured there were found numerous batteries, the personnel of which had not been able to get near their guns at all owing to the accuracy of the British counter-battery work by means of flash spotting and sound ranging.

In 1918, during the final advance of the British up to the Armistice, the use of forward guns on both sides became a normal feature of battles.

To sum up, as regards the rôle of the field artillery in the offensive, surprise being the essential factor to success:—

- (a) No registration is possible, and this demands a very high standard of training.
- (b) Sound ranging must be an integral part of the artillery, and counter-battery work will be largely undertaken by field pieces.
- (c) The co-operation of tanks and artillery in support of the infantry must be of the most intimate character.
- (d) The 18-pounder used as a forward gun has been shown to be far more demoralizing to the enemy, and it also raises the morale of the infantry to a far greater extent than when used in any other manner.

Yet it is not an ideal weapon to select for this kind of task.

As regards the defensive:—

It is essential for successful defence to have

- (a) Guns which can shift their position quickly the moment they are located by the hostile artillery, coming into action expeditiously and being prepared to shift their position often, if necessary, during the course of a battle.
- (b) Forward guns, well camouflaged, will also play an important part in the defensive.

Finally, the Great War has conclusively proved that:—

Mobility is the best camouflage for every calibre of gun, and that there is a tremendous future for the gun firing when in motion, as in the case of the 6-pounder firing from a tank.

SMOKE.

The decisive effect produced by smoke in those actions in the Great War in which it was used intelligently renders it necessary to devote a special paragraph to the subject.

In the first experiments with smoke phosphorus was used, and was found to be most effective.

Very little was available, however, for a considerable time, and that little was not used except by the few who realized its advantages.

A captured German document on the Ypres front in August, 1918, gave a detailed account of the capture of the village of Meteren by the British in July of that year. The success of which operation the German staff attributed entirely to the judicious use of smoke. The document warned everyone to be prepared for a recurrence of such methods in the near future.

Yet, in spite of being forewarned, the Germans were completely outwitted by the use of smoke less than a month later in the successful assault of Hoogenacker Ridge followed, a short time later, by the capture of Hill 63, both places being in the vicinity of Meteren.

These facts go to show that at the present time the intelligent use of smoke, by the attacker, confers such an advantage on the attacker as to ensure success, and the defender would appear to have no measures to counteract this disadvantage under which he labours.

It is still not generally realized that a phosphorous shell is most demoralizing and that it can cause material damage. The moral effect of all artillery, especially in open warfare, is much greater than any material effect produced; it is therefore worth consideration to increase our smoke shells in mobile warfare at the expense of shrapnel and H.E.

Smoke as a screen to tanks is almost essential; it is used in the same manner as destroyers use it.

WEAPONS: (b) GAS.

In March, 1915, the Germans introduced a weapon which was a complete departure from anything which has ever been tried in warfare.

Poison gas was a partial failure at Ypres because the Germans did not use it in sufficient strength.

There were many reasons for this; the stuff was difficult to get and very expensive to make, very difficult to handle, and so little was actually known as to its possibilities as to make the danger of its reacting on the side which used it a very real one; and at that time the Germans had no protective appliances for their own troops.

Had the Germans used their gas in 1915 in anything like the concentration which it was used by both sides in 1918, they would have achieved a complete break through to the Channel ports.

The Germans created another surprise in the third battle of Ypres, 1917, by their use of mustard gas.

The number of British casualties was enormous.

Here was surprise again.

In 1918 we were able, by utilizing existing railway spurs constructed near the front line, to give a very limited mobility to cylinder gas, which was taken into position on trucks by a locomotive and discharged simultaneously by electricity, with good results.

From the above it would seem that there are two forms of gas attack, both of which come in the nature of a surprise.

The first form of attack consists in inventing some kind of gas, not necessary lethal, against which the existing issue of gas masks of the enemy are useless.

Some such gas, known as "M," has been used lately on the Archangel front, and its effect seems to have been to cause the victim such acute temporary discomfort as to prevent him from taking part in the battle. This opens up a very important matter in connection with surprise in war.

For the nation which encourages experiments in its laboratories of applied science, in connection with gas, will have a tremendous advantage over the nations which do not.

The second form of attack would seem to be in the nature of some form of tank which can carry the cylinders forward and discharge them from any suitable locality.

This form of surprise attack will be dealt with later.

WEAPONS: (c) MACHINE GUNS.

The machine gun may be said, with truth, to have had the most decisive results on the Great War; for it was chiefly owing to the machine gun that Britain invented tanks.

Again, tanks enabled the machine gun to be fired during movement, a factor in war of the future which may lead to great changes in tactics when its significance is fully realized.

The experiences gained has shown that the "life" of a machine gun barrel is much longer than was originally estimated.

Machine guns can fire an almost unlimited amount of ammunition, in reason, provided the ammunition is obtainable, and tanks were the first step towards solving the ammunition supply problem.

ROADS.

The great arteries of communication were not interfered with to any appreciable extent by aerial attack until 1918.

In March, 1918, British machines delayed the Germans, who were attempting to cross the Somme in the neighbourhood of Cheresy, for two hours.

And during the same period British airmen frequently swept down on to roads which were being used by German transport and cleared them with machine gun fire and bombing, causing untold delay in the delivery of ammunition and supplies.

It is a noteworthy point that March, 1918, was an exceptionally dry month, and these conditions enabled the transport to move off the roads when otherwise it might have been made immobile.

When the Germans went back in 1918, the British army found the roads in bad condition, with the result that large numbers of road repairers and large quantities of metalling were given priority to the mobility of the fighting troops.

In no other part of the world can roads be found to compare with those of the Western Front, either in numbers or quality. Yet had it not been for the *pavé* of Flanders there would have been a complete breakdown in mechanical transport of supplies.

To sum up regarding roads.

At the end of the War it was found to be necessary to devote a considerable proportion of the personnel of an army to their maintenance and upkeep.

Attacks from the air had shown that the side which had the mastery of the air, even temporarily, might interfere with the movements from the area of the strategic concentration to such an extent as to completely upset calculations of time and space.

MECHANICAL TRANSPORT AND TANKS.

Mechanical transport owed its success in war to the fact that it was already a commercial proposition in peace when war started. There was a great variety in the types which came up on mobilization; but, as soon as possible, a standardized type of lorry was constructed which was found to be suitable.

Mechanical transport was used everywhere, even in the impenetrable East Africa bush, as soon as a road could be made for such transport, and the roads were made with astonishing rapidity.

The British Army made use of mechanical transport as early as 1914 for troop movements, and the Germans conveyed many of their infantry in this manner in their first overwhelmingly rapid advance through Belgium; the French made use of mechanical transport to convey large forces of infantry from Paris to the Battle of the Marne.

The use made by the French of mechanical transport at Verdun was even more wonderful than the actual defence of that place, for it requires the very highest organization to pass up reinforcing divisions, ammunition, supplies, and the hundred and one requirements of a modern army fighting a modern battle, on a single road.

But the British revolutionized war by the invention of tanks. For they produced a vehicle which was independent of roads, which could move by day and night, and which could hit as it went along, its crew being protected from bullets and shell splinters.

The first tanks had a much greater moral than material effect on the enemy, and it was soon found that artillery could easily knock them out at the pace at which they moved.

Mud was their enemy, however, and a combination of mud and deep shell holes was their undoing at Passchendaele.

They were used with great effect in the Cambrai offensive of November, 1917, to cut wire.

At this battle the tanks not only showed the only way of cutting wire without bombardment, but they literally crushed the hostile machine gunners on the other side of it.

It was chiefly due to their masterly handling that the British counter-attack a few days later was so successful in the vicinity of Gauche Wood.

It is not to be expected that tanks could perform any task allotted to them without great risk of partial or total failure, under the conditions that supervened regarding the tanks themselves and their personnel in the Great War.

When the exceptional experimental nature of the tank, combined with the inability to indulge in deliberate peace training during the Great War, which was so necessary for the personnel, is taken into consideration, the marvel is that they performed as well as they did.

Perhaps the best answer to Ludendorff's criticisms regarding tanks may be found in the battle of Hamel, 4th July, 1918. On this date ten battalions of infantry (Australian Corps), 60 tanks, 326 field guns and howitzers, 302 heavy guns and howitzers, and 147 machine guns were used on a frontage of 6,000 yards to 7,500 yards.

The assaulting battalions had a frontage of 1,000 yards, and the tank frontage was 100 yards (including all tanks) to 160 yards for the final objective.

The tanks had an approach march of 2,500 yards to 6,200 yards in one night, moving at 25 yards per minute on half throttle (silent), and 60 yards per minute best speed.

The most interesting feature of this attack was the utilization of four supply tanks to carry up infantry requirements, thus saving carrying parties of 1,250 men.

The attack penetrated to an average depth of one mile (in places 2,500 yards) and 41 officers, 1,431 O.R. were captured.

The tank casualties were five tanks and 13 tank personnel.

PART II.—THE APPLICATION OF TANKS TO THE BRITISH ARMY.

DEDUCTIONS DRAWN FROM PART I.

Among the conclusions it was sought to establish in Part I. were the following:—

(a) That unless the Government are prepared to spend enormous sums on the encouragement of horsebreeding for military purposes the supply will prove inadequate to meet even first requirements on mobilization.

(b) That cavalry is not essential to the prosecution of successful war, provided some substitute can be found to take its place.

(c) That tractor-drawn artillery has undergone sufficient tests to prove its value.

(d) That the effect of forward field guns is far greater than when these guns are used at longer ranges in open warfare.

(e) That smoke is of the greatest value in screening the movements of troops on the battlefield.

(f) That machine guns are very immobile in the attack unless used in tanks, and that they are almost invincible in the defence unless attacked by tanks.

(g) That infantry cannot be expected to show their proficiency in their weapons and to exhibit their true fighting spirit when loaded up like pack animals.

(h) That sound ranging has become so perfect in the location of batteries as to direct scientific attention to some form of silent and non-flashing gun.

(i) That in future war the air force will be in a position to deny the use of roads to the enemy, and that consequently calculations of time and space will be liable to disastrous upsets if too much reliance is placed on the ability to use roads.

THE PROBLEM OF APPLYING OUR PRE-WAR NUMBERS IN PERSONNEL TO THE POST-BELLUM ARMY.

At the time of writing, this problem is an extremely difficult one for the following reasons:—

The pre-war army consisted of so many battalions of infantry, so many batteries of field artillery, so many cavalry regiments, so many royal engineers, and so many fortress companies of garrison artillery.

At the present time we are called upon to man so many battalions of the Machine Gun Corps and so many battalions of the Tank Corps, and not one single extra man will be provided for the purpose of forming these additional units.

Obviously then something has to be cut down, and the question naturally arises, which is it to be?

Are we to take the relative utility of the various arms in the Great War as a basis for disbandment?

In the Great War we got into the way of talking of so many yards to the gun, instead of so many troops to the gun.

Accustomed as we are to generous artillery support, it would seem to be a mistaken policy to reduce our pre-war establishment field batteries.

In view of the well-established axiom that no success can be attained in battle without infantry, it would be a very great mistake to reduce the number of pre-war battalions.

But what of the cavalry?

Against machine guns, served by stout-hearted foes and echeloned in depth, it was helpless.

Consequently, on the Western Front, its absence would not have affected the course of the campaign to any appreciable extent.

In Palestine it has an incomparable record; but here again it is submitted that had the machine-gunners been really stout-hearted, and had those same guns been properly organized in depth, the cavalry could never have accomplished the apparently impossible.

Lastly, it should be remembered that the Palestine *débâcle* was effected by yeomanry, Dominion troops and Indian cavalry, none of whom it is proposed to reduce or disband in the scheme now submitted.

The War has shown us the necessity of great mobility on the part of machine guns in the attack owing to their limitations of range, and the need of normally seeing their target, which necessitates their constantly moving to a far greater extent than the field artillery.

If this is accepted, it follows that their rôle would be better carried out if they were amalgamated with the Tank Corps.

For the first time in history—owing to the tank—machine guns were able to function while on the move; but their field of fire was greatly limited in the War when they were placed in tanks owing to lack of training and failure to make opportunities on the part of the personnel.

It would seem to be inevitable that this limitation can be overcome as the result of peace training.

The British Army was, before the Great War, a glorified police force with numerous detachments scattered all over the globe.

The three principles governing our Imperial strategy were, and are, Sea Command, Local Defence, Mutual Support.

Consequently the oversea garrisons were distributed in compliance with the above principles; that is to say, certain regions received a garrison sufficient to hold out until the Navy could ensure that help should be forthcoming from Imperial resources.

It is not proposed to discuss in detail the size and strength of the garrisons for all our liabilities.

But it is interesting to consider two places which have sprung into great prominence as the result of the War with the consequent shifting of the Balance of Power, viz., Hong Kong and Jamaica.

Now both Hong Kong and Jamaica have many miles of front to defend, and unless their garrisons are extremely mobile they would be overwhelmed by sheer weight of numbers.

The latest type of tank would ensure the arrival of the garrison in time to dispute a landing or to strike quickly and decisively, and yet be back in time to dispute any other attempts against other parts of the defences.

The provision of tank ways in the precipitous parts of the defences—glorified alternative positions—is a simple matter.

THE TANK OF THE FUTURE.

Since the Armistice tremendous strides have been made by the British Army in tank design and construction.

A long series of experiments, the object of which was to produce a tank of high speed and largely increased circuit of action, has resulted in the production of a spring track making high speeds and extreme mobility in action possible.

The chassis of this design is nearly ready for standardization; body design is a simple matter.

THE FIGHTING TANK.

The medium D represents the new design, its characteristics being as follows:—

Average radius of action	..	..	200 to 300 miles.
Maximum speed	..	..	29 to 30 miles per hour.
Average speed across country	..	..	17 to 20 miles per hour.
Weight	..	..	About 15 tons.
Petrol consumption	..	..	Less than 1 mile to the gallon.
Trench-crossing capacity	..	..	11 feet 6 inches.
Climb slope	..	..	45 degrees.
Durability	..	..	Over 2,000 miles.

The above shows that its advance on the original tank design and construction is comparable to that of the modern locomotive of to-day with "Puffing Billy," or of the first automobile, produced in 1887, with a Rolls-Royce.

But the tank has taken under four years to make this wonderful advance in design and construction.

Under the circumstances, one may well ask what is there to stop even more revolutionary changes and improvements in five years time for instance, provided funds for design and construction are not stinted. At the present time experiments are being conducted with a view to the production of an amphibious tank, which may shortly make the very complete system of bridges and bridging expedients for tanks, introduced since the Armistice, obsolete.

By means of tank bridges, and tank rafts, tanks are now independent of roads and road bridges, a fact which has increased the value of the tank a hundred per cent.

THE MEDIUM D TRACTOR.

Experiments are now being carried out with a view to the production of a cross country tractor on the spring track principle, which shall be suitable for commercial purposes.

It is of primary importance to the army of the future that some such tractor shall become a commercial proposition as soon as possible.

The Army was enabled to begin the Great War comparatively well equipped with mechanical transport because this class of transport was in use for commercial purposes at the time.

Consequently, it is essential that this cross-country tractor shall be standardized and made suitable for commercial purposes as soon as possible, in order that the Army may be able to utilize it in the event of another war.

This economical method of obtaining transport for military needs more than counterbalances the disadvantages of allowing the secret to leak out, provided design and construction of the fighting tank are kept secret; for at the present time it must be a matter of extreme difficulty to obtain money for an innovation which is only useful for military purposes and useless for anything else.

The tractor will, it is hoped, be a commercial proposition by next June.

At the present moment an ordinary touring car body fitted on the medium D chassis gives a distributed weight of 2 lbs. to the square inch.

This means that where the weight of the human body—the average distributed weight of a man being 7 lbs. to the square inch—would cause a man to sink up to his knees in sufficiently marshy land, the tractor would barely leave a trace on the same surface.

The track is made of rubber, and its life is five times that of a wheel carrying a load of similar proportions on the road.

Off the road, it is hardly necessary to add, there is no possible comparison, since the wheel could not function unless the surface is reasonably hard.

The friction of the tractor is considerably less than in the case of a wheeled vehicle of a similar weight at the present stage of experimenting, and, by the judicious elimination of pins and "bits" generally, it is expected that friction will be reduced much more.

On a bad, bumpy road the jolting, which would prevent high speed on the part of a wheeled car, is hardly felt when driving one of these tractors.

The tractor is extraordinarily light on any surface; the result would be that the wear and tear of a road from this form of traction would be very little.

The maximum speed of the present vehicle is about forty miles per hour on a good surface, and the petrol consumption is about twenty-five miles per gallon.

Off the roads speed would depend on the surface, and so would petrol consumption; but it may be estimated as a rough guide that there would be a decrease of about twenty per cent. in speed on an average cross-country surface, with a corresponding increase in petrol consumption.

It is estimated that the cost of such a tractor, when mass production is started, would be about twenty-five per cent. more than the cost of a similar vehicle on wheels.

Very searching experiments have been carried out in order to test the machine's suitability or otherwise, in mud, the *bête noire* of the springless type of tank. The tests have been a complete success for the tractor.

The track is undergoing constant improvement, the latest development being a track made in rubber-lined sections.

Track improvements will go on almost indefinitely, and there is little doubt that there will be some kind of spring device which will be alive and actually fixed on to the track itself; this will mean that vehicles will eventually carry their permanent way about with them; thus railways will be eventually obsolete, just as wheels will be a thing of the past as soon as this tractor becomes a commercial proposition.

But in all this improvement as regards vehicles there does not appear to be a corresponding tendency to grapple with the fuel problem or, at any rate, there would appear to be no alternative to the present extravagant consumption in petrol.

Sir Oliver Lodge, in his address to the British Association, has definitely expressed his opinion that if we can harness atomic energy the results will be indescribable; and much is claimed for Sonic Waves, though confidence in this new form of transmission is rather shaken owing to lack of confidence in the practicability of the scheme. And there are many other ideas and claims; but not one single case is a practical proposition at the present time.

From the foregoing it is obvious that there are almost unlimited possibilities for the development of the tank principle in the near future, provided design and construction are in no way hindered through lack of funds.

The problem of how best to apply tanks to the British Army has now to be considered.

At no time in its history has the British Army been faced with a more complex and diverse rôle than the present.

But, at the same time, the cry for economy and the determination of the nation to ruthlessly cut down every item of expenditure, makes it imperative to scrap any personnel or material of questionable value.

THE SUBSTITUTION OF CAVALRY BY TANKS.

Hence it follows that if the premises of the writer concerning the value of British Regular cavalry in the Great War are correct, a very great reduction, if not a total abolition, of that most expensive arm would appear to be inevitable, sooner or later, provided always something can be produced which is capable of performing its duties.

It is not proposed to abolish yeomanry or Indian cavalry for the following reasons:—

The yeomanry are to a great extent composed of hunting farmers who, so long as hunting continues, can generally be counted on to give up a portion of their time to preparing themselves for war; for they, in conjunction with other Territorials, have strong and definite views regarding their duties of citizenship, and it is to be noted that their cost is not great since they can produce their own horses.

But, sooner or later, owing to the difficulty of horse supply, the Yeomanry will be unable to maintain itself as a mounted unit.

The retention of the Indian cavalry is necessary on political grounds alone, apart from every other consideration; because it offers inducements to the very best class in India to mingle with the best class which the British nation can produce.

The mutual respect and esteem of these two classes engendered by comradeship in arms has done, and will do, more to ensure our prestige in India than anything else.

The question now arises, can tanks take the place of cavalry?

Before attempting to answer that question it would be as well to consider the principles of the employment of cavalry in war. Everyone appears to be unanimous on this point, namely, that the duties of cavalry in war necessitate that arm being formed into three groups: independent cavalry, protective cavalry, and corps or divisional cavalry.

The rôle of independent cavalry is essentially a fighting one, but even then they are responsible for their own protection.

If tanks are to replace cavalry it has to be considered how they are to perform the duties of patrol work.

In close country, especially in the summer when the leaf is on, the cavalry soldier is practically confined to the roads. His horse has 21 stone up, and is probably short of food, water and rest. Under these conditions no horseman would ask his horse to face a series of blind stake and bound fences, not to mention post and rails, wire and muddy brooks which must be jumped. The procedure of a patrol under such conditions is to move with care down the side of the road and trust to their vigilance to detect the presence of an enemy before that enemy detects them.

If the patrol has the good fortune to locate an enemy before he has time to open on them with a machine gun their procedure is to leave their horses under charge of a horseholder and to work round the gun on foot.

A machine gun with a little wire and with flanks secure cannot be rushed by a charging patrol as a rule, though it has been done.

As soon as the obstacle to progress has been removed the horses can be whistled or signalled up, and that is wherein lies the great mobility of cavalry. Or they may encounter a hostile patrol, and under such circumstances it is best to rush the patrol, a form of fighting to which British cavalry are especially addicted.

Now, if we can produce a machine which makes light of the "stake and binder," which can cross small streams without checking, and which can rush a machine gun with impunity, it would be a substantial advantage in reconnaissances of the kind mentioned above.

The argument against employing tanks lies in the necessity of employing large numbers, but this, in the writer's opinion, would not be necessary if the principle be accepted that tanks employed on such a duty have special trained and equipped infantry attached to them, and carried by them.

The tank in such a case would fulfil the rôle of the supporting troop, or even squadron, when it became necessary to reconnoitre a certain area.

The infantry, dressed in some light equipment and carrying just a rifle and a few rounds, would be able to cover the area to which it might be necessary to devote a careful reconnaissance in a surprisingly quick time, if they are properly trained to run across country and trained to an exceptionally high standard as scouts.

When moving forward the only thing to worry about would be the anti-tank gun. This, owing to its size, would be far less easy to conceal than the machine gun, and it would require more transport than the latter requires to move it about.

It will also be extremely difficult to know where to lie in wait for the reconnoitring tank if the latter moves off the roads.

The aeroplane would work in close touch with the tank, dropping its messages near the tank, which would at once wireless them back.

The mission of the independent tank will, in nine cases out of ten, involve fighting, and fighting in mass.

It is submitted that a battalion of tanks, for example, well-handled and well-led, would be comparable to the cavalry as destroyers are to a fleet of armed pleasure boats.

By means of the wireless telephone it would be possible for the tank commander to manœuvre his tanks from the air.

It can be argued that the other side will have tanks too, and that there will be no advantage either way.

But, if both sides have them, it always comes down to the same old principle, the side which is best trained in peace will beat the side which has equally good equipment, but which has been training on the wrong lines or not at all.

In reconnaissance, for protection, the movement of tanks would be regulated by, and depend upon, those of the troops being protected. Definite orders would be given as to when to go out, to what distance, and when to return.

With cavalry employed on such work it would be necessary to give routes; with tanks, areas would be sufficient.

Within those areas the tanks and infantry would act very boldly against an enemy's patrols, and they would endeavour to make their particular area too hot for him.

There remains the question of cost. On the one hand, to disband thirty-one regiments of cavalry, with all its enormous cost of feeding and remounts, in addition to the cost of its personnel; on the other hand, a very expensive machine which only eats when it is actually doing business. But the tank cost of production would be greatly reduced when mass production begins.

THE APPLICATION OF TANKS TO ARTILLERY.

Is the field gun to be drawn by the tank which, having brought the gun into action, will then leave it as in the case of horses, or will the gun be on a fixed mounting inside the tank?

There is much to be said in favour of the former theory, the chief argument being the fact that guns would be far easier to conceal if left alone than they would be if part of the tank, and that if the hostile artillery picked up the battery one shell might knock out the tank and its crew, a contingency far more likely to happen than if the gun were in action alone.

But there is much to be said in favour of fighting the gun from the tank. It gives cover to its crew from splinters and bullets, and, in fact, everything but a direct hit. It is infinitely more mobile, and

consequently could be moved away the moment the hostile artillery located it; by its ability to emit smoke it could conceal its movements from the air and from the hostile artillery.

Since forward guns have proved their value they should be largely employed.

The most suitable form of forward gun is the 6-pounder firing from the tank actually on the move, a most demoralizing weapon, as everyone knows who has seen it in action. Its disadvantage lies in its limited range and the flatness of its shell trajectory.

While it is true that infantry cowering at the bottom of a trench are safe from the 6-pounder, it is none the less true that infantry so placed are out of action until the tank is right on top of them, when the assaulting infantry will be on top of them too.

The ideal support from guns of larger calibre, such as 18-pounders, 4.5 howitzers or heavy mobile artillery, whatever the nature of their task—smoke screens, counter battery work, etc.—should be from guns on fixed mountings in tanks.

Doubtless there will be much opposition to this suggestion, especially from artillerymen. They will argue that all the eggs are being put into one basket, with the result that a direct hit will knock out gun, crew and ammunition; that concealment from the air will be well nigh impossible, and so on.

Now, as mentioned before, the best type of camouflage is mobility, and what can be more mobile than a gun which can be shifted at a moment's notice whenever the hostile artillery get on to it?

Also, is it not preferable for the gun crew to be working in splinter proof cover than in the open? In the Great War no gunner expected more than splinter proof cover, and he seldom got that.

It may be argued that tank artillery would be unsuitable in the defensive.

Apart from the consideration that a tank army is first and foremost an offensive weapon, that is no objection to the employment of tank artillery in the defensive.

For they can be camouflaged like anything else, and they would be ten times more useful in assisting a sudden counter-attack—the soul of the defence—when mobile than when it would be necessary to send back for their transport, which would in all probability never get up. The initial cost will be heavy, and consequently the change would be very gradual.

There are two very important considerations which should make the balance in favour of tank artillery.

These considerations are influenced by the danger from aerial attack; they are:—

The artillery would no longer be dependent on roads for its ammunition supply from rail-head to the gun, for cross country tractors could go where they liked.

Horse lines, which, towards the end of the war, became the nightly prey of the night bomber, would no longer exist.

The Great War has shown that machine guns are very immobile in attack, and it is therefore suggested that machine guns (Vickers) should work entirely in tanks.

THE ABSORPTION OF THE MACHINE-GUN CORPS BY THE TANK CORPS.

There would appear to be no valid reason against this suggestion if we consider fairly the rôle of the attacking machine gun, as we knew it in the war. Put shortly, it was to get the gun into some position from which it could support its infantry with the maximum amount of fire and the minimum amount of movement, since movement meant cessation of fire and man-handling on the battlefield—a very slow business.

Now if we can produce a very fast-moving tank from which machine guns can fire with a reasonably good field of fire, the machine gun would fulfil its rôle of close support and co-operation with the attacking infantry better than in any other way. It is surely a matter of training.

By constant and unremitting training, a tank crew would learn instinctively how to pick up a target; that is to say, visual training would be of primary importance, and also constant battle practice on every kind of ground would be of almost equal importance.

On the defensive the distribution of the tanks would depend on the configuration of the ground; but the same principles would hold good as advocated for defended ports, viz. :—

That, provided the tanks are well concealed in the first place, their mobility confers the great advantage on them of being able to move to an alternative position immediately their position is discovered and their former position becomes too hot for them. They can also give immediate support in a counter-attack.

THE FIGHTING TANK.

As its rôle in the attack would be to lead or closely support the assaulting infantry, make gaps in the wire when necessary to do so, and generally keep down the heads of the enemy until its infantry are among them, it follows that it must make full use of its speed and of its ability to conceal its movements by smoke when necessary. Normally it should go, like the forward guns, in advance of the infantry.

From what has been seen of tanks it would appear inadvisable to put the 6-pounder and machine gun in the same tank, for when this is done the tendency is to give too much attention to the 6-pounder and to use the machine gun as a secondary armament. In a crew of three or four, with a N.C.O. in charge, this will always happen.

Consequently, it would seem to be better to have automatic rifles in a 6-pounder tank; these automatic rifles to be normally silent when the gun or guns are firing, for it might seem to be advisable to have two 6-pounders in each tank, either both firing at once or one held ready as a spare.

In the same way the machine-gun tank might have a gun for use on emergency, e.g., for use against a hostile tank but not otherwise.

It appears to the writer that unless the crews of these tanks have a clear idea of their respective rôles in action, there will be a tendency in action to make only partial use of either weapon.

It follows, therefore, that the tank which is armed with a 6-pounder gun should be handed over to the artillery and should become an artillery tank; whereas the tank armed with Vickers machine guns should be called the fighting tank.

This tank would perform the duties of independent or protective cavalry, as explained before, or it would lead the infantry in the attack, and later it would take up the pursuit of a beaten enemy, its advantage in this respect over cavalry being that, even when in reserve, it can follow the fight closely so as to take immediate advantage of the fleeting moment.

Obviously, tanks must take full advantage of their speed, and this being so, the old tortoise habits of attacking infantry must give place to something very much quicker.

GAS TANKS.

The existing type of tank is not only watertight but gas proof. A type will eventually be produced which will make the engine gas proof too.

This opens up vast possibilities for a tank to discharge gas as it goes along, or from any selected locality at point blank range, the crew shutting themselves into their gas-proof chamber until clear of the gas cloud.

It would be necessary to have all tanks fitted with gas-tight chambers in case the enemy produce some form of gas which could penetrate the existing gas defensive measures of the infantry. This would ensure that under no conceivable circumstances could the entire army be *hors de combat*, in case of being subjected to some entirely new form of gas of which the secret had been well kept.

Provided the tanks were all gas-tight, any surprise form of gas will have comparatively little effect.

FIRST-LINE TRANSPORT AND TRAIN.

It has been strongly advocated that in the organization of the infantry battalion allowance should be made for an extra company in order to abolish the excrescence which battalion headquarters now represents.

In the following proposals, therefore, this extra company is duly allowed for.

Since the principle of reorganization on a tank basis is put forward in order to be independent of roads, it follows that first-line transport must be organized on a tank basis.

Thus a company would require one tank to carry its tools, Lewis guns, S.A., and grenades, and it would want a second tank for its cooker, this cooker to carry rations for consumption as issued by the equivalent for the train, and also the iron ration for the entire company, instead of weighing the men down with this terrible handicap to quick and speedy movement. These two tanks would each have two trailers, each of these trailers to accommodate a platoon; the object of these trailers will be explained later.

It should be noted that the headquarter company tanks would easily carry along all signal equipment and medical stores. No reduction could be made in water vehicles, which will be two, but which would have a much increased carrying capacity for water. The trailers would be fitted on a char-à-banc basis so that the officers would be in front; as they would have no engines they would be extremely light and they would be so constructed as to carry packs, blankets, and greatcoats of the company. It is hardly necessary to say that the cooker tanks would be able to use their fuel and engines for cooking purposes.

As regards the train: the only vehicle left for the train would be the supply vehicle.

It is proposed to make this function in conjunction with an echelon of supply tanks from railhead. The result would be that one director could handle both these echelons provided he had assistance from the air. Objections would be raised to the idea of having the movements of a company so dependent on two tanks; but it has to be remembered that none of these machines would ordinarily come under fire from the ground, and mobile repair shops would be up in a surprisingly short time. Another very great advantage would be the comparative invulnerability of the first-line transport and the train from bombing.

On one occasion the wagon lines of an entire artillery brigade were rendered immobile by night bombers, during the final advance to Roulers in October, 1918, by the Second Army.

A field ambulance tank could easily be devised which would give the minimum amount of jolting.

PART III.—THE TACTICS AND TRAINING OF A TANK ARMY.

DEDUCTIONS DRAWN FROM PART II.

(a) That forward guns will consist of 6-pounders firing from inside the tank on fixed mountings with no Vickers guns in addition, but only automatic rifles as an auxiliary; and that the remainder of the artillery, whether 18-pounders, 4.5 howitzers, or pieces of heavier metal, will be on tractor chassis.

(b) That since tanks are the only means whereby calculations of time and space will not be liable to be upset by aerial attacks, owing to movements not being confined to roads, everything, including transport, will be converted into tanks.

(c) That such conversion will have the effect of changing our organization regarding train and D.A.C. and of causing great reductions in the number of vehicles, owing to increased carrying capacity and increased speed.

(d) That in order to take advantage of the increased speed of tanks, the infantry will have to make much more use of mechanical transport, and also very radical changes will have to be made in their equipment and methods of training in order to speed them up on the battlefield.

The above are the main points which it is well to keep in mind when dealing with Tactics and Training.

THE MOVE FORWARD FROM THE AREA OF CONCENTRATION.

The great advantage which would accrue to a tank army would be the speed of its advance from its area of concentration to its objective, the enemy's field armies.

Thanks to such speed, the strongest weapon in war, strategical surprise, could be made possible to an extent hitherto unknown, even in the days before the introduction of aircraft.

As is well known, the average march of two or more corps under ideal conditions, when contact with the enemy was expected, would have been about 12 to 15 miles; the ideal conditions including good roads and plenty of them, good troops in hard condition, good information of the enemy's movements, and first-rate supply arrangements.

Now, by means of the tank of the future, it will be possible to speed up the movements of the slowest arm to an extent which will render the element of surprise one of the ruling factors in the opening of a campaign.

Naturally, two trailers will materially decrease the speed of the tank described in detail in Part II.; but it does not seem unreasonable to expect that a well-trained army should average 50 miles a day.

If expense were no object the infantry could have self-propelled vehicles on the tank principle, and this would add greatly to the distance which they could cover.

The independent tanks, moving far ahead of the army, and supported by 6-pounder tanks and the air force, would seek out the enemy's independent tanks, or they might possibly be able to interfere with his concentration.

The main problem which confronts us when moving forward from railhead is how to feed such a force going at such a pace. Obviously, the fuel supply tank will play a very important part in solving the problem.

There is little doubt that in the years to come very far-reaching economies will be effected in the utilization of some new power. This will result in enormous reductions of fuel consumption and a relatively great reduction of friction, both these factors causing a much increased radius of action; *e.g.*, the present radius of action of 45 miles for a motor lorry would be increased to 450 miles for a supply tank.

Such vast increases in distance from railhead, rendered possible by methods described above, will make it unnecessary to frequently move railhead, a highly undesirable course to adopt under any circumstances.

It has to be borne in mind also that emergency rations could be carried with a tank army to an extent of which we have previously had no conception.

Again, it may be necessary to operate direct from the point of disembarkation in a country where it is impossible to make use of

railways; but in such a case a system of echelons of supply tanks could be improvised on the same lines (but on a far more extended scale) as happened on the Western Front at the end of the Great War, when the Germans had destroyed the railways with such effect as to render them useless until lengthy repairs had been effected.

The great objection to forced marches in the past was the physical strain, causing loss of morale, which the infantry and horses were called upon to endure.

In an army where the infantry are carried in a certain amount of comfort, and in which there are no horses, this objection is ruled out, and consequently Commanders could call on their troops to make a big effort, knowing that risk of failure due to physical strain is minimized.

It is reasonably certain in tank warfare of the future that increased vigilance will be necessary during the move forward from the area of concentration.

Owing to the increase in speed and independence of roads it will become extremely difficult for the air force to discover the movements of a tank army, unless the weather conditions are perfect. The advance will be carried out with such speed that the tanks detailed for protection will only be able to deal with formed bodies of hostile troops who are themselves out for information or protection.

There may be a tendency for the anti-tank gun, carefully concealed from the protective tanks, to reserve its fire until the tanks of the main body approach within range.

This is not likely to happen normally, however, since the occasions when troops can be asked to sacrifice themselves with no possibility of succour have always been few in the past. Another point to be borne in mind will be the increasing frequency of land mines.

Land mines would appear to be the *bête noire* of the tank; but their danger is more than counterbalanced by the ignorance of the line of advance, which, thanks to the complete independence from roads and ability to cross rivers and other obstacles, completely mystifies the side which is acting on the defensive.

PROTECTION.

Now it is obvious that the methods of protection to a force tied to movement on roads will differ in a marked degree from those which would be employed to a force independent of roads and which is moving at great speed. For the latter is like the movements of a fleet which can go wherever there is sufficient depth.

It follows, therefore, that an advance of such a nature would be carried out in a formation which would ensure full deployment in the minimum time.

In the past the great objection to marching on a broad front off the roads was the fatigue it caused the infantry and horses in maintaining their direction, distances and intervals, and in surmounting obstacles.

In the case of a tank army marching on a broad front this will be the normal condition of affairs, since the infantry will be passengers,

and since the maintenance of direction, distances and intervals will be as easy as it is with a fleet at sea.

In order to get into the picture of future operations it would appear to be of interest to take the movements of a division after it has left its assembly area.

If it is assumed that each division has a battalion of fighting tanks as part of its organization, and, in addition, has another battalion composed of gun tanks (6-pounders), the present organization of tanks, viz., four sections of four tanks in each company, and three companies to each battalion, would seem to be suitable, and a similar organization, in which "battalion" is used for want of a better term, is applied to the gun tank.

Normally the advance would be conducted on a two-brigade front, as happened frequently on the Western Front at the end of the Great War.

Each brigade would furnish its own advance guard, which would consist of a proportion of fighting tanks backed up by a proportion of 6-pounder gun tanks.

These tanks may be required to take on board as a temporary measure a proportion of infantry to make ground quickly if the tanks were held up, and this tactical advance guard, composed, as it would be, of all three arms, would be perfectly competent to carry out its rôle.

When at rest the force would be protected by infantry outposts with *point d'appuis* of fighting and gun tanks.

It might be advisable for every division to carry a proportion of mine-laying tanks (under the R.E.) with it, in order to lay mines for its protection when at rest, on the defensive or with the rearguard in retreat.

INFORMATION.

The principal means at the disposal of the Commander-in-Chief for strategical reconnaissance would be aircraft and tanks. It is probable that much more reliance will be placed on aircraft in the future for this duty, the independent tanks being used normally against similar organizations of enemy tanks. Distribution in the case of independent tanks might lead to undue dispersion. But the employment of tanks on tactical reconnaissance would seem to be of the first importance.

They must act with the greatest thoroughness and energy in the closest touch with the advance guards, and, like them, they should have special infantry in addition to their crews.

A well-handled tank on patrol, when these machines have been fitted with an efficient silencer, could obtain information of incalculable value.

THE BATTLE.

Decisive success in battle can be gained only by a vigorous offensive. (F.S.R.I., Ch. VII., Sec. 99.)

As mentioned previously, a tank army when within striking distance of the enemy will advance on a broad front in formations which will enable the various arms to deploy rapidly.

It would be well to consider the formation of a division in order to visualize its procedure in an attack.

Normally it would probably advance on a two-brigade front with one brigade in divisional reserve.

As before mentioned, each division would have a battalion of fighting tanks and a battalion of 6-pounder gun tanks as part of its organization, in addition to its three brigades of field artillery; and each of these two leading brigades would have a company of fighting tanks and a company of gun tanks.

The principle of the postponement of full deployment to the last possible moment applies with equal force to a tank army—for full deployment would mean when the infantry take to their feet.

The time for this would depend on a variety of conditions, the most important being the accuracy and strength of the hostile artillery. But, unless the hostile artillery have good observation, it is well known how little damage is inflicted even on infantry in column of route by intermittent shelling.

The commander of a force attacking under such conditions may be in a position to order full deployment at some well-defined line; on the other hand, the training and intercommunication in his command may have reached such a pitch of excellence that he can dare to postpone deployment until the actual conditions of that particular battle may make it necessary to do so.

In order to hide the movements of the attacking force from the enemy he can screen his movements with smoke, and, by means of his artillery, other than 6-pounder gun tanks, he would be able to smoke all O.P.'s and gas them with M. gas.

Thanks to sound ranging and air reconnaissance, aided by photography, he may be in a position to deal with the hostile guns by means of his counter batteries.

All these preparations will have to be completed in much less time than formerly in order to allow the tank army to take full advantage of its speed—for speed is the trump card of the attack.

If we can carry our infantry up to the latest moment and then launch them to the attack, in which they shall advance in rear of the fighting tanks and gun tanks as hard as they can go, and still be able to shoot and bayonet the enemy at the end of their rush, we are bound to reduce casualties to a minimum; for it is the slow advances under artillery fire, and later under machine gun and rifle fire, which were the main causes of our terrible losses in the Great War.

The fundamental reason for heavy casualties to the attacking infantry before they begin to function—to use their weapons against the hostile infantry—can only be attributed to one cause, a bad plan of attack.

For instance, the plan may be good, but the enemy is not surprised: that means something was wrong with the plan, though it is usually put down to misfortune.

Again, the screening arrangements may not be sufficient; this was often the case in the Great War, and it was due not so much to the

meagre supply of smoke shell as to the inability to apply it to the best advantage owing to lack of training in the use of smoke.

As regards the infantry advance, they have to deploy from their trailers in the shortest possible time, and then advance at top speed until they are at grips with the enemy.

This means very high training, both physical and mental—for to advance at top speed for a thousand yards, more or less, and then fight at the end of it, when the smoke screen may have blotted out all distinctive features, requires the ability to go at speed on a compass bearing, the compass used being similar to those in use with the aircraft. But, in order to do this, the infantryman must start without the handicap of the tight trouser and the heavy equipment. There is only one kit in which to play football, and similarly there is only one kit in which to fight.

By means of trailers it will at last be possible to carry all superfluous kit and to fight in shorts, with nothing to carry but the rifle, bayonet, and ammunition, or his Lewis gun and revolver if he happens to be a Lewis gunner.

So the course of the battle would be, generally speaking, as follows:—

At zero hour the guns serving the division in the attack would open on the most suitable targets, which would probably be a combination of blinding O.P.'s and counter-battery work. At the same time the 6-pounder gun tanks would advance against the position, firing as they move, supported by the fighting tanks, the speed of both being at its maximum until clear of the shelled area.

As they advance they would put out a local smoke screen. No barrage fire would be used, though the aircraft might be able to put down a moving barrage of bombs in order to catch the enemy's reserves well behind the objective.

The infantry, deployed from their trailers as soon as they are in the vicinity of the shelled area, would rush across that shelled area and follow in the wake of the fighting tanks and gun tanks, both of which would be making gaps in the wire and keeping heads down by their fire.

But the infantry must use every endeavour to keep up the pace in order to allow the tanks to make the fullest use of their speed.

Speed is everything; for it causes the tank to be but a fleeting target to the anti-tank guns, and it also makes it difficult for the hostile machine gunners and riflemen to hit the infantry. It may be necessary to have special aircraft detailed to drop smoke bombs on the anti-tank guns.

On capturing the position the infantry must be organized in depth at once while the tanks are withdrawn to a suitable position from where they can deal with the hostile counter-attack, and the best way to deal with it is by moving out at full speed to meet it.

If it is obvious that the victory has been decisive, the divisional commander, by means of his reserve brigade with the reserve companies of fighting and gun tanks, could bring his infantry up as close as circumstances permit, and launch his tanks to reap the fruits

of victory at the "Fleeting Moment" in a manner which is not possible by cavalry on the modern battlefield owing to the wire and trenches and other obstacles which impede the movements of a mounted soldier, but which have no effect on tanks. The infantry would support this exploitation, and, by means of their trailers, they could go fast and far.

Such is the picture conjured up to the imagination when a tank army attacks.

But what of the enemy? Supposing he has similar tank equipment?

The answer to that is training.

It matters not how well an army is equipped unless it is thoroughly well trained in its weapons and equipment.

It has been proved in the Great War, and in other wars, that the British character is particularly well adapted to exhaustive military training, and the discipline of the British Army (a matter of primary importance in time of high strain) can be made incomparable.

So long, therefore, as the British Army is well trained and imbued with the will to conquer, it will surely overcome an army similarly equipped.

THE COUNTER-ATTACK.

It is a truism that the commander who decides to await attack in a prepared position intends to deliver a counter-attack when the right moment arrives.

Instances of successful counter-attacks on a large scale are few because the commander had made a bad plan. His failure may be caused by the inability of his troops to carry out his plan owing to their tardiness in coming into action, and this is the most common cause of failure.

The classic instances of successful counter-attacks on a large scale have been invariably planned by a great commander, as the difficulties of choosing the right moment and of ensuring that the troops can function at that moment have been stupendous. There have been two outstanding reasons for such failure in the past: the premature exhaustion of the troops detailed for the counter-attack and their lack of speed in its delivery. In the Great War the counter-attack delivered just as the enemy gains his objective was certain of success provided it was carried out with vigour and resolution, and provided it was possible to bring troops quickly by means of mechanical transport from rest areas.

Such an attack was invariably successful, for it caught the troops who had just penetrated the line at the time when, as every leader knows with personal experience, troops are extremely liable to panic.

The next best form of counter-attack was one in which plenty of time was allowed and which incidentally allowed the enemy to consolidate his position; success in such a counter-attack was nothing like so certain as in the former case.

But in a tank army we are in a position to deliver the ideal counter-attack.

For, thanks to speed and the ability to husband the strength of our infantry for the decisive moment, it is contended that we can seize the fleeting opportunity.

Let us say, for instance, that a divisional commander has been holding a position with two brigades, while the third brigade is in reserve.

A responsible staff officer who has been watching the battle from the air passes back the signal to attack right, left, or centre of the position held.

This signal would be promptly acted on by the 6-pounder gun tanks moving forward at full speed, supported by their fighting tanks. The infantry would come up in their trailers as far as the hostile zone of fire would permit, and then deploy.

That signal would not normally be given until the staff officer has assured himself that the hostile reserves had been slipped. Now, as everyone knows with war experience, reserves moving forward after the attacking troops are peculiarly sensitive to counter-attacks, since they are not deployed for one thing, and also because they have firmly fixed into their minds that they are going to attack the enemy; consequently, when the position is reversed with lightning-like rapidity by means of a thoroughly organized offensive, pressed through with the utmost vigour and resolution by fresh troops imbued with the splendid morale engendered by high speed, it is a certainty that those reserves will be swept away.

But it is essential that the commander himself, or some responsible person with full discretionary powers, shall see the conditions and give the signal.

War of the future will necessitate the commander being on the spot in the same manner as the naval commander is on the spot; for quick decisions will have to be taken.

To sum up with regard to tanks in battle:

The vigorous offensive, whether in attack or counter-attack, will be vigorous in reality instead of in name, as frequently happened in the past, owing to the reasonable certainty of bringing the infantry up to time and fresh to their task.

Gas tanks—probably army troops—would be used wherever their presence might be considered necessary.

TRAINING AND TRAINING AREA.

Before considering the problem of training under the novel conditions which the writer has endeavoured to set forth, it would be as well to consider what type of training grounds would be required.

Now, the striking power of a tank army depends entirely on a very high state of efficiency of its personnel. This high state of efficiency can only be attained by training in a thoroughly practical manner, which involves the training of all arms in combination.

Our present areas in England, such as Aldershot, Colchester, and, to a lesser degree, Salisbury Plain, are comparatively useless for

such practical training, since practical training means battle practice with live ammunition.

Such areas are to be found, however, in England and Wales, and could be acquired at comparatively small cost to the nation. For instance, the writer has in mind a tract of country which is but little known to the average Englishman, though it is within six hours' train journey from London. It comprises parts of the counties of Radnorshire, Cardiganshire, Carmarthenshire, and Brecknock; and it is possible to go in a south-westerly direction from the first-named county for over 50 miles without crossing a railway, and the roads are few. It is a country with no vested interests such as grouse moors or watering places, and its sole inhabitants are sheep. It is ideal country for tanks, as it can show every conceivable form of tank obstacle; and battle practice of all arms could be indulged in without endangering life.

It is essential that the training of our regular divisions should take place on some such ground during the summer months. It would be necessary to build tankodromes in such an area for experimental work, as well as for training purposes.

During the winter months the majority of the troops would be in barracks at places like Aldershot, Salisbury Plain, etc., where much useful individual training could be carried out with the aid of a very few tanks; such training might be even carried out during the early part of the training season until May.

But from May till October onwards all troops should be under canvas or in hutments on the battle practice areas. As regards the training of the territorial division, the tendency of trying to give the territorial a smattering of training in the handling of all arms in combination must be guarded against.

For it must constantly be borne in mind that the territorial will be an amateur who will have all his time taken up with learning the rudiments of soldiering. His training really begins when he is embodied, as all those who had experience of territorials in the last war know perfectly well.

It might be possible, however, to attach territorial officers to battalions, batteries, or tanks, and to allow them to actually handle the men, the regular officers handing over their commands for the short time in which the territorial officers were attached to that particular unit.

The experience in leadership, even if innumerable mistakes were made, would be of incalculable value to officers whose shortcomings are not caused by lack of keenness.

With regard to India:

Training areas are no difficulty in that country, and consequently it would be possible to give the six divisions composing the field army similar battle practice to that carried out at home. Some kind of improvisation would have to be arranged for troops earmarked for internal security.

As regards the troops allotted to such overseas stations as Hong Kong, or Malta, training would consist of carrying out schemes in connection with the defence of those places.

INFANTRY TRAINING.

Before attempting to outline the course to be adopted as regards training infantry, so as to fit them to act with tanks, it might be as well to visualize what our infantry private soldier will be required to do under such novel conditions of warfare. Briefly, instead of being the steady old draught animal, which is what he has become with a 70 lb. kit, we want him to be able to do fast work, and we want every man to be in a position to fight at the end of it.

A very few tanks will suffice to make really practical work possible during the preliminary training, which might be carried out on the existing training areas, such as Aldershot, during the month of April for troops quartered at home. But from May to October the regular infantry should be away on the large training areas, where shooting, battle practice and combined training can be carried out to an extent hitherto unknown.

In such an army there will be no room for the officer or man who is not physically fit; it will be necessary to maintain a very high standard, and those who fail to pass the test necessary to ensure such a standard must be ruthlessly weeded out.

The best way to keep up a high standard of efficiency is to hold a quarterly test, failure to pass which, after a second chance, causing a man to be superannuated from the Army. The conditions of service will be so good that there will be no possibility of men attempting to get their discharge in this way.

ARTILLERY TRAINING.

Every member of a gun tank detachment must be thoroughly trained in mechanism of his gun and tank engine. This can be done during the individual training period when the personnel of the gun tanks would be back in winter quarters, such as Aldershot, leaving a small proportion of personnel to act as caretakers in the tankodromes on the training areas. During the training season the detachments will carry out their preliminary work in the same manner as the infantry. The main thing in which gun tanks have to train is shooting when going at speed and shooting at a moving target to represent a hostile tank.

A great deal of training will be required in smoke, *e.g.*, how to make a smoke screen, how to advance on a compass bearing under cover of smoke, and so on.

In addition, constant practice over every conceivable kind of obstacle will be essential, and, later on, working with the other arms until the commander of the division is satisfied that he has an instrument which is sensitive and handy to his slightest wish.

The remaining field artillery will want constant practice in getting their tractor guns over very kind of obstacle, and practice will be wanted in camouflaging the guns from the air. They will do all their battle practice at the training area.

FIGHTING TANK TRAINING.

The training of the personnel of fighting tank should be on similar lines to that of the gun tank personnel. That is to say, during the individual training period the men would receive instruction while in barracks in mechanism of the machine gun and in mechanism of the tank. Such training will be no "go as you please" affair, the men being kept up to the mark by being required to pass frequent standard tests in order to ensure that not an instant of time will be wasted when work on the proper training area begins in earnest.

During the training season an enormous amount of work will have to be got through before combined training can be undertaken. For it must be always borne in mind that, in addition to assisting the infantry, the fighting tank will have to undertake the entire duties that hitherto have fallen to the lot of the cavalry.

Reconnaissance and getting back information will form a very important part of fighting tank training.

Again, nothing but constant practice on a battle practice range and under battle conditions will bring the machine-gun shooting up to that degree of efficiency which will ensure hitting a moving target from a moving target.

Also the standard of visual training, practice from a limited outlook, such as exists in a tank, must be the highest it is possible to attain to.

SUMMARY AND CONCLUSION.

The scheme put forward will, it is claimed, in addition to a marked increase in military efficiency, effect considerable economy in man power in the army of the future, the principal cause of expense, as Mr. Winston Churchill has stated recently. But in the proposals submitted there is no intention of trying to save the soldier's skin, for the soldier must always be prepared to sacrifice himself for his country.

By means of the wholesale conversion of muscle into mechanics, it is certain that the cost to the enemy of such sacrifice shall be increased ten fold.

With the passing of the horse, commerce and war must turn to some other means of traction; but whatever form of traction is decided on for war, whether on the lines indicated in this paper or not, it is of primary importance it shall be something which can be used for commercial purposes in peace time.

Such changes cannot be effected all at once, but must take place gradually and continuously so that replacements are made with the minimum of cost to the nation.

We are only at the beginning of a mechanical age, the possibilities of which are as awe inspiring as they are enthralling. It behoves us, therefore, not only to maintain our lead in design and construction, but to keep a watchful eye, by means of our intelligence service, on what other nations are doing, in order not to be caught napping by the sudden onslaught of a rival nation on some portion of our scattered Empire. The mechanical age will make this a very real danger.

WORK OF THE KITE BALLOON ON LAND AND SEA.

By FLIGHT-LIEUT. P. WORTHINGTON, M.C., Royal Air Force.

On Wednesday, March 10th, 1920.

LIEUT.-COLONEL SIR ARTHUR LEETHAM, C.M.G., F.S.A. (Secretary of
the Institution), in the Chair.

THE CHAIRMAN: Ladies and Gentlemen, I have to apologise for the absence of Lord Montagu of Beaulieu, who it was hoped would have taken the chair this afternoon. Major-General R. M. Ruck was approached to fill his place, but unfortunately he is away, so that in default I have been compelled to take the chair myself.

Before introducing the Lecturer, I should like to draw your attention to the fact that as long ago as May, 1895, Major Baden-Powell, of the Scots Guards, lectured before this Institution on the subject of Kites and their uses in War, and what he said at that lecture as to the future of kites has turned out remarkably true. He pointed out that Franklin, in 1752, had made many experiments with kites with regard to meteorological research; but it was Lord Dundonald, in 1806, who first actually made use of them in war, having flown from his ships, kites, by means of which he distributed propaganda to the people on the coasts of France. Major Baden-Powell foretold that kites would be found very useful for signalling, photography, and aerial torpedoes, and he also said that they might be used even for raising a man. I think that our Lecturer to-day would do well if he were to peruse this former lecture, as he will find in it very much that will interest him.

In introducing the Lecturer, Captain P. Worthington, of the R.A.F., I should like to say that this officer has had much experience in lecturing to the various units of that force, and is at present in charge of research work for the Royal Air Force. I am sure he will give us a very interesting lecture, and I will now ask him to read his paper.

LECTURE.

I RECENTLY had cause to go through the library upstairs in search of figures on the performance of balloons, and I was surprised to find that there was a complete absence of information on any modern balloon, either technical or tactical. This is perhaps the more surprising in that balloons are the oldest branch of aviation.

I propose this afternoon to deal mostly with the tactical employment of balloons, and only to touch on the technical development so far as it is necessary for a clear understanding of their use. I have said that

balloons are the oldest branch of aviation ; so long ago as 1794 they won their first battle honours, a balloon being used by the French at the battle of Fleurus, and it was due to the information given by the balloon observer, that Jourdain was able to make the dispositions that won that battle ; at Hampton Court there is an admirable old print illustrating this episode. Thereafter, balloons make only spasmodic appearances in history, notably with the army of the Potomac ; in the Siege of Paris, during the Franco-Prussian War, when the first aerial battle was fought between two spherical balloons ; lastly, at Port Arthur, where the Japanese converted an old airship into a sort of kite balloon.

No real progress was made till the German Parseval, in a laborious series of experiments, substituted a kite balloon for the older type of spherical, and his labours remained the last word from 1896 to 1915. The Allies had neglected or abandoned balloon development so that the battle of the Marne was the first revelation of what balloons could do in modern war. Balloon services were revived, with both the French and British, and eventually attained very considerable proportions, there being some 130 balloons on the Allied front in France alone. Let us briefly consider the modern kite balloon ; it is a blunt, stream-lined, hydrogen-filled envelope, stabilised by "feathering," with three air inflated rudders set at an angle of 120 degrees. A portion of the balloon is cut off by a diaphragm to form a ballonnet ; this diaphragm automatically operates a valve when the gas pressure becomes excessive, whilst when the volume of gas contracts the shape is preserved by an inrush of air through a wind scoop into the ballonnet. A rigging band, with a series of bridles, distributes the load equally over the fabric ; one series of these bridles leads down by a pyramidal suspension to the winch cable whilst another series carries the basket with the observers. The balloon is kept captive by a many stranded steel wire cable worked by a winch ; now a highly elaborate mechanism, which for naval work is fixed in the ship, and operated by steam, electricity or hydraulic power ; for land work a petrol engine, mounted on a motor chassis, is used.

The balloon is virtually useless unless it can communicate with the ground, and this is best done by telephone ; the introduction of four separate conductors as a telephonic core in the cable, together with semi-wireless operation as a stand-by, ensures continuity of speech under practically any circumstances.

The natural dangers which a balloon has to face are principally wind and lightning ; to combat the former, resistance must be diminished so far as possible, and this can only be done by maintenance of form. The worst conditions are encountered at sea, where the speed of the ship in steaming into the wind is added to the wind speed ; then, if shape is not preserved, the nose of the balloon blows in, she becomes unsteady, falls into the sea, and very little can be saved. Lightning, or more properly, atmospheric electrical discharges, have accounted for very many balloons, particularly at sea ; a remedy has been suggested, after a prolonged inquiry by an expert committee, but experience as to its efficiency is still lacking.

Of artificial dangers, hostile aircraft and long distance artillery are the only two that count. During the late war in France, the long-range gun became the more important factor; the relative proportions of losses from different causes can best be shown graphically. To save the observers, in the event of an accident, parachutes are provided, and the observer either jumps out or can merely pull a lever and descend in the basket. It is perhaps worth pointing out that though parachuting is trying to the nerves, it is relatively a safe occupation, the percentage of fatal descents, even on active service, being less than one half per cent.

I desire before leaving technical considerations to emphasise one point, namely, that the problems that confront the balloon, whether on land or sea, are essentially the same, and the utilisation of the balloon depends on the same fundamental principles, though the varying sphere of action may call for minor differences of technique.

In discussing the employment of balloons it will, for the sake of clearness, be convenient to consider naval and military functions separately, though realising that such a division is an arbitrary and artificial one. As the potentialities of balloons have been at times a matter of some controversy, I have thought it best, where possible, to give the views of senior officers outside the Air Service, whose general professional experience, as well as their acquaintance with balloons, entitles their opinions to far greater authority than any statement of mine could pretend to. It is for this reason that I shall introduce a number of remarks which are not intended for the self glorification of ballooning, but for the conviction of those who have not had personal experience of the results obtained by their use.

COMBINED OPERATIONS.

Chronologically first was the employment of balloons by the Navy in mixed operations, namely, at Gallipoli. A merchant ship, the "Manica," was hastily fitted out early in 1915, and despatched East with a scratch crew, primarily with a view to registering the Fleet guns on land targets. The type of balloon, the Drachen, was ill adapted for Naval work, its natural instability and long parachute tail making landing a particularly trying operation; the winch was very primitive, as were the means of telephonic communication. I will not inflict a long account of its work on you, but will confine myself to quoting the conclusions, as to the utility of the observation, as recorded by the captain of the "Queen Elizabeth."

"June 8th, 1915.

"I have the honour to report that during the recent operations the most satisfactory aerial observation of firing was carried out by the kite balloon. . . . The value of this form of observation was shown by the repeated attacks made on the balloon ship 'Manica' by hostile

aeroplanes and also by the fact that as soon as the balloon was seen to be up, all batteries in its vicinity stopped firing and ships above Chanak proceeded up the Dardanelles. Very good and accurate spotting results were obtained on nearly all occasions, a trained spotting officer doing the observation. When firing at forts or batteries it was seldom that the third shot fired was more than a few yards from the target. Observers in the basket of the balloon are much more conveniently placed for observing and are able to do so much more accurately than from a moving machine. . . . Communication of spotting results was by telephone to the balloon ship and thence by semaphore or search-light to the firing ship and was very satisfactory. Reports were generally received by firing ship in less than 30 seconds from the fall of shot. . . . To summarize, the most reliable results are obtained from a balloon; owing to its limitations aeroplanes may be a useful supplement."

The "Manica" subsequently took part in the East African operations. Further amphibious experience was gained by the use of balloons from capital ships in the Black Sea when supporting the Volunteer Army during 1919; the latter results are particularly interesting as movements of troops as well as fall of shot were recorded, and observation was carried out in air speeds up to 45 knots.

FLEET OPERATIONS.

The logical result of the Gallipoli experiment was to try balloons with the Grand Fleet and accordingly in the early autumn of 1915 a balloon was flown from the "Engadine." The results of these trials are best dealt with in reports by the Vice Admiral commanding the Battle Cruiser Fleet and the Rear Admiral commanding the 3rd Battle Cruiser Squadron, from which the following extracts are taken:—

"October 31st, 1915.

"These experiments are entirely satisfactory and demonstrate beyond doubt the value of the kite balloon as an adjunct to the Grand Fleet. . . . They can be counted upon to perform the work for which we now employ seaplanes and aeroplanes in a much more reliable and satisfactory manner. I would strongly advocate that they should be used in the 'Campania' in place of some of her planes. For spotting purposes they would be invaluable and under certain conditions they would be of value in locating enemy submarines, on the surface or submerged, and mines. In fact, they could perform all the duties which are now performed by the enemy's Zeppelins except that of dropping bombs. As to the vessels to be used for this service, the primary qualifications are speed and sea-keeping qualities.

(Signed) "DAVID BEATTY,

"Vice Admiral."

" October 30th, 1915.

" As far as the Navy is concerned the kite balloon can be used for :—

- (1) Reconnaissance at sea with the Fleet ; to report the movements and formation of the enemy's Fleet.
- (2) Control of fire.
- (3) Observation of enemy's submarines under water and of mines.

" For this report I propose to confine myself entirely to the first of these functions . . . *this matter is of the most vital importance to the British Fleet.*

" I think I have now proved the value of the kite balloon for reconnaissance purposes ; in a suitable vessel the strategic and tactical value will be very great ; at 3,000 feet there will be a radius of vision of 60 miles and the communication will not be of the sketchy kind in use from aeroplanes, but will be conversation by telephone from a skilled observer to a responsible officer in the balloon ship who, with efficient W.T. and all signal books and codes at hand, will rapidly signal the information that may win or lose the dominion of the world. . . .

(Signed) " H. L. A. HOOD,

" Admiral Commanding 3rd Battle Cruiser Squadron."

In consequence of these reports the " Campania " was fitted to take a balloon, but her sea-going qualities were limited, and at Jutland she arrived 48 hours too late ; that was perhaps the bitterest disappointment of the War. It thus became self-evident that the best results could only be obtained by flying the balloon from the ship whose firing and movements she was to control. A winch was therefore fitted on the " Benbow " and similar trials were carried out later on the " King George V." and the " Dreadnought." By then the infinitely more stable and air-worthy " M " type balloon had been evolved by the fertile genius of Commandant Caquot, so that the results obtained were proportionately better.

Most of the capital ships were fitted with permanent winches and the policy was extended to the battle cruisers and light cruisers ; it was a balloon flying from the " Cardiff " that had the honour of leading in the surrendered German Fleet.

It may be objected that the above reports were written before much practical experience of balloons had been gained, and also that since that time heavier than air craft and their means of communication have vastly altered. With regard to the first point, I extract from a Grand Fleet Order published in March, 1918 :—

" The balloon possesses the great advantage over other types of aircraft of permitting telephonic conversation being maintained continuously between observer and towing ship ; it is particularly useful for a report which, to be of any value, must be passed in a very short space of time, such as spotting for gun firing, reporting the presence of a submarine, mine, or track of a torpedo. Exercises in spotting for gun firing have

shown that good results can be obtained. Tracks of torpedoes are easily discernible from a balloon and the wash of submerged submarines can be very easily seen from a balloon. . . . During the smoke screen trial in Pentland Firth at a range of 12,000 yards with the balloon at a height of 1,500 feet when the enemy was completely hidden from the control tops, the balloon observer reported that he could see 400 yards of clear water between the smoke screen and the enemy, whose movements could easily be seen. . . . On one occasion, although the submarine was not seen, the torpedoes when fired were seen 8,000 yards away and the track of the torpedoes followed till they came up 3,000 yards from the ship."

That these views, as to the utility of kite balloons, were not confined to British admirals is shown from the following extract from the report of the United States 6th Battle Squadron :—

"While exercising the squadron underway permission was granted for our regular destroyer screens to fire torpedoes at us as a target. At the same time our observer in the kite balloon was able to pick up the torpedoes at several thousand yards' distance and give the necessary information for conning the ship to avoid them. . . . There is no question but that at least one ship in each division of battleships and cruisers should carry them. . . . During the recent exercise, of May 22nd, a torpedo attack had been pre-arranged ; there was a low hanging fog or mist, visibility about 4,000 yards, when a destroyer force was sighted on our port-bow, which we took to be our own, and from whom we expected an attack. Manœuvring accordingly we received a report from the observer that the attacking force was on our starboard bow, approaching for attack, although they were not visible from deck. Owing to the low visibility, without the kite balloon we could not have known anything of this torpedo attack ; as it was we were not only given this information, but the division was enabled to avoid five torpedoes which crossed our track between the first and the last ship in the column.

(Signed) "HUGH RODMAN."

As to the superiority from a weather-resisting point of view of the kite balloon, over other forms of aircraft, I will only instance the case of a storm on October 8th, 1918. The Grand Fleet proceeded to sea with 18 balloons and a number of aeroplanes ; the storm encountered was one of the worst ever met by the Grand Fleet ; not a single aeroplane was brought back to harbour ; 5 out of the 18 balloons returned intact.

SUBMARINE WARFARE.

With the fitting of balloons to destroyers and sloops there began yet another phase of balloon activity. It had been shown that they could spot submarines under water and above water, and accordingly they were used for two distinct purposes :—

- (1) Offensively, to search for and destroy submarines.
- (2) For escort purposes, with convoys of merchant ships.

As to their efficiency in these rôles, let the following figures speak for themselves. At one Mediterranean base, between June and August, 1918, 27 patrols were performed, during which 1,475 hours were flown, 10 submarines were sighted for certain, as well as two doubtful ones. Again, out of 11 submarines definitely known to have been destroyed as the result of aircraft activity, two, or 18·2 per cent., were accounted for by balloons. These two submarines were "U.69," sunk by the "Patriot," and "U.B.83," sunk by the "Honeysuckle." On the escort side, some 3,000 merchant vessels were convoyed in all waters and only three were sunk. It will perhaps be agreed that such figures give justification for the report of the Commodore commanding the Adriatic force, that :—

"The balloons up to the present really seem to fulfil the claims made for them, as an anti-submarine weapon, and they give much satisfaction."

An extract from the interrogation of prisoners from the German "U.B.124" is also interesting :—

"At 9 a.m. on July 14th, the submarine submerged to avoid a trawler; on sighting a kite balloon towed by a "P" boat she dived to 65 feet. A couple of hours afterwards she rose to periscope draught, but still seeing the balloon she again dived to 65 feet; 1.30 p.m. she came to the surface, but shortly afterwards a kite balloon in tow was observed in the vicinity of a battleship; on sighting this balloon, the submarine again submerged and proceeded alternately at periscope draught and 65 feet until midnight. . . . From the statement of the Commanding Officer, it appears that submarines are considerably inconvenienced by the presence of kite balloons in the neighbourhood of Fair Isle. He considered that it would be necessary to dive to depths of 66 to 132 feet to escape observation, and he was very averse to going through the channel at such depths."

MINE CLEARANCE.

A last phase remains to be dealt with, namely, mine sweeping. During 1918, up to the month of September, some 18 mines were reported and sunk by balloons; special steps were then taken to fit trawlers with balloons for mine sweeping work. Owing to the very limited space available, special means were devised for raising the observer to the basket without bringing the balloon to the deck; the solution of the problem was hastened by the inventor twice falling into the water during the process of perfection. After the Armistice, mine sweeping was largely carried out by balloons in the Eastern Mediterranean, and during this a curious incident happened. On June 20th, 1919, a balloon was transferred to the trawler, "Duchess of Richmond"; for a week she worked locating and sweeping mines; the entry in the log for June 28th runs thus :—

"N.3 found and reported at 11.0. At 12.30, whilst working on this line under the M.C.O., "Duchess of Richmond" struck a mine and took

a heavy list. Owing to the damage to K.B. winch balloon was unable to be hauled down. At 14.30 ship sunk, balloon still flying with observers. The balloon was valved to the water, and observers were taken off in a boat. The balloon rose to 300 feet and was transferred to a drifter and back to base."

I have tried to give you a brief idea of the work and scope of Naval balloons during the war. It remains to be mentioned that in the summer of 1919 they were deleted for motives of economy.

MILITARY FUNCTIONS.

So far experience of balloons on land has only been gained in a big war through which they were generally stationary; the mobile stage did not last long enough to allow of the evolution of a form adapted to the altered conditions.

As a result the balloon was designed chiefly to give the maximum possible height, as experience showed that the greater the height the greater the accuracy of the observation. No great attention was paid to gas economy, and as during stationary operations there was plenty of transport available, gas could be brought up in sufficient quantities. Elaborate telephone communications were evolved by each section, generally with the main exchange at the Balloon Headquarters and a forward exchange in the vicinity of the Forward Artillery Exchanges. The balloon was treated for purposes of organization as an Army Corps unit and dealt largely through the Corps Heavy Artillery Commander. The efficiency of its work depended to a great extent on two considerations:

- (1) The extent and efficiency of its telephone lines.
- (2) The amount of liaison work carried out between the balloon and the local Artillery command. The importance of this latter point was due to the lack of knowledge and appreciation of the functions of the balloon and there was practically no channel except personal contact by which this knowledge could be spread amongst the gunners.

The Germans were not only the first to use balloons in land work, but were also the most skilled in their employment. This result was forced on them to some extent by their inferiority in the air, in consequence of which their Artillery planes were able to do much less work than ours. How keen was their appreciation of the possibilities of the balloon is shown by the following translation of a German document entitled:

"NOTES OF THE BALLOONIST.

"Look at the panoramic photographs. Each battalion, etc., receives some.

"Before all, the balloon sees:—

"(a) The enemy Artillery concentrations, the emplacement and extension of barrage fire and enemy C.P.O.'s, and of an enemy gas attack, the enemy zones where the enemy does not fire much, the rockets, the tanks.

"(b) The flashes of enemy batteries, also the smoke occasioned by their fire. The superstructure of batteries and the salient points of the terrain in the neighbourhood of the batteries, such as isolated trees, hedges, crossroads, etc. . . . facilitate the immediate adjusting.

"(c) The occupation of enemy camps and P.C.'s by the appearance of smoke.

"(d) Road traffic, railroad lines with standard and narrow gauge. The moving columns and detachments are specially visible by the dust which they throw up, the railroads (standard and narrow gauge) are visible by a stream of smoke.

"(e) All the illuminating sources, such as sparkling metallic parts or direct light; they furnish excellent departure points for reconnaissance and laying out.

"(f) Aviation terrains and balloon emplacements.

"(g) Friendly troops, batteries, and C.P.'s are kept informed regarding the state of their camouflage.

"Which are the things a Balloon does not see?"

"(a) The parts of the terrain where the balloon itself is not seen.

"(b) The shifting of men in the trenches and in positions, Infantry or Artillery working at entrenchments, men moving in small numbers in the open terrain.

"How must Troops help the Balloon?"

"(a) The balloon finds out whether there is any possibility of observing. It can, by experience, judge the view which can be seen from the balloon.

"(b) At once establish a visual liaison with the Infantry balloon, make the visual signals very slowly, by separating them clearly; aim carefully at the car of the balloon; a dash—three seconds, a point—two seconds.

"(c) Entirely make use of the proper observation conditions of the Artillery balloon; often visibility and time rapidly become bad. The batteries must thus rapidly prepare for fire and shorten the ranging by an accelerated precision. The balloon can simultaneously observe for several batteries.

"(d) The friendly balloons which are detached and go adrift towards the enemy must be brought down by fire as soon as the observer has jumped out. The balloons which would come to land must be kept, owing to the recuperation of its valuable material. Send as soon as possible to the Balloon Section the material (cards, etc.), which might have been thrown and found back. Enemy balloons or ours must not be brought down, when they go adrift towards the interior of our lines.

"DUTIES OF THE BALLOONS."

"Duty concerning the Artillery."

"(1) Reconnoitre the enemy batteries and mark their position.

"(2) Watch the activity of the enemy batteries' fire by means of lights.

" (3) Regulate friendly batteries on enemy batteries, trenches, campings, localities, roads and animated objectives and observe the efficacy of their fire.

" (4) Look out for the important Artillery objectives and provoke fire on these objectives by telephone message.

" (5) Verify our own barrage regarding the gaps which there might be.

" (6) Announce the emplacement and the barrage extension, and the C.P.O. fire.

" (7) Combat the fleeting objectives by means of observation batteries.

" General Duties.

" (1) Observe the railroad and road traffic at the rear of the enemy front.

" (2) Help the command, up to the Infantry Company Commander, by photographs and their exploitation.

" (3) Maintain liaison with trench posts by visual signals.

" (4) Transmit the illuminating signals which have been observed and the requests for barrage and C.P.O. to the elements concerned.

" (5) Observe the Battle Field, during action, and keep the High Command constantly posted regarding the situation.

" (6) Foresee the attack sector and the beginning of the attack, from the emplacement and the intensity of fire of the enemy Artillery.

" (7) Designate to the Infantry in progress the ways of approach where the enemy does not fire much.

" (8) Make known to all the troops the hour of the beginning of our own actions, by visual signals.

" In important combats the balloon will observe the battlefield even during night.

" EFFICIENCY OF THE BALLOONS.

" In clear weather, the view of the balloon stretches over 30 km. behind the enemy lines. The observation of fire may, in favourable circumstances, be executed on objectives situated up to 10 km. in the rear of the enemy lines, on a very conspicuous objective up to 15 km. and more. The immobility of the balloon enables us to exactly know the details of the terrain. This advantage is especially appreciable for the observation of fire. The exchange of ideas between the observer and the command or the battery is made directly by telephone, and there is perfect and uninterrupted understanding with the observer. The balloon is less independent of the wind and weather than the avion. It is without protection against the attacks of enemy avions and against artillery fire. It is often attacked by avions and artillery. Bad weather requires an extreme tension of the observer's forces to accomplish the missions which are confined to him. Violent winds and electrical discharges expose the worthy material and the observer to great dangers. Therefore: rational use, avoid all ascensions which are not strictly necessary. Slight damages

of the great covering of the balloon may easily cause a temporary disability.

"The troops must take advantage of every opportunity for balloon officers to come to undertake their instruction and detail to the balloon officers from other arms. The ascensions of troop officers, in clear weather, are indispensable, to see the whole lay-out of the field of action, from the point of view of an observer in a balloon.

(Signed) "VON OSTERTAG."

From the basis of this document I will briefly review the phases of employment in the British Army.

ARTILLERY CO-OPERATION.

Primarily, the land balloon has been, and indeed still is, regarded as an Artillery O.P.; as such it presents peculiar advantages; the great height attainable, up to 7,000 feet, obliterates the question of dead ground, especially in such a flat country as Flanders; the stationary position allows of the use of high-power field glasses, and the continuous observation of an extended area, a valuable feature when carrying out a counter battery shot of 200 or more rounds; telephonic communication allows of continuous contact between the battery commander and the observer in the basket. An obvious corollary is that the observer must have first-class vision, be an adequate map reader, and have a thorough knowledge of the principles of gunnery. With suitable telephone communications and organization it has been possible in France to carry on shoots with five distinct batteries at the same time; it must be admitted that this was a *tour de force*, and that one of the batteries was a 15-inch howitzer, which only fired every fifteen minutes. As a matter of practice it is possible to observe every calibre of shell, though in the case of 18-pounders the registration is best carried out with percussion shrapnel, as H.E. is liable to ricochet, and the height of time shrapnel above the ground cannot be ascertained. Observation may be given either on the line "balloon target" or battery target, or a modified clock code can be used; where the angle of view is less than one in ten it is possible to give range accurately, providing the target is clear. For very long range work, with guns of large calibre, intersection shoots have been successfully carried out. The longest which has come within my knowledge was between two French balloons, firing with a 14-inch gun on Nesle station at 24,000 yards; from information gathered from German prisoners subsequently it was found that the third round had arrived in the station at the same moment as a leave train.

INTELLIGENCE.

Closely connected with artillery registration was the spotting of hostile batteries; during a long stay opposite a given sector the observer acquired an extremely detailed knowledge of the country opposite him, and as a given area could be observed for long stretches at a time, it was

not only possible to locate hostile batteries by their flash, but also to connect their activity with fall of shell in our lines, thus affording evidence as to the calibres of batteries and their arcs of fire. Much general evidence could also be gathered as to movements of road transport and trains, but the distance was generally too great to allow of individuals, or even bodies of men, being observed. Moreover, in an active sector the demands for artillery observation were so great that other activities were necessarily curtailed, particularly as artillery work gave the most readily tangible results.

LIAISON.

Liaison was largely neglected in the British Army, though some experiments in lamp signalling to and from the Infantry were successfully carried out; reports were also made on diverse occasions of the signals and Bengal fires used to indicate the extent of an advance.

Had there been a sufficiency of balloons it is possible that special units might have been detailed as divisional balloons, a practice followed in the French and American Armies. It is hardly realized, I think, how much more accurately the observer in the air is informed of the progress of operations than anyone else, and the continuity of observation obtained from a balloon makes it unique in this respect.

Experience, however, is more convincing than anything else; to give you some indication of the view obtained from a balloon I propose to show a few actual pictures photographed from the balloon on various parts of the front. The utility of photography from balloons was only just being discovered towards the close of operations; their value to the troops in the line in showing them what the unseen country was like was considerable and they were still more valuable for training observers on the ground preparatory to their ascent.

AS AN ANTI-AIRCRAFT WEAPON.

Balloons suffered severely from the activities of hostile aircraft, but on one occasion at least they had a satisfactory revenge. The following is extracted from a report from the G.O.C., Salonika:—

"Owing to the repeated attacks by E.A. it was decided that a charge of 500 pounds of explosive, packed into a 60-gallon water tank, to which two detonators were fixed and contact wires arranged, should be sent up in an unserviceable balloon. The experiment proved a complete success, for on the 21st instant at 10.41 the balloon was attacked by a hostile aeroplane, which approached close to the basket. The observer at the switch then fired the charge, which instantaneously brought down the enemy machine, breaking the fuselage in half close behind the pilot's seat. Documents found on the pilot, who was killed, identified him as Ober Leutnant Von Eschwage, a famous German aviator, who, the enemy claim, had brought down 20 machines in aerial combat."

Chiefly, however, balloons were used at night against hostile bombers, services of this sort being instituted by all the belligerents, but the exact

value of this form of defence for anything but restricted localities is not easy to estimate. In this country large balloons were employed to raise a curtain of wires to the required height, thus forming a barrage between the zone of the anti-aircraft guns and that in which the fighting planes were operating. For this purpose a special type of balloon, the largest captive ever built, was evolved, which could raise the apron to a height of 15,000 feet. One Gotha at any rate fell a victim to this means of defence, though lack of material prevented the apron being extended all round London.

In a recent lecture in this theatre great stress was laid on the danger of an unannounced attack on London by hostile aircraft; it is suggested that a suitably organized apron scheme affords the cheapest and readiest insurance against this form of attack.

SMALL WARS.

From the experience gained in the late war it is possible to foresee the rôle which the balloon can play in the small war in the future. The demand for greater mobility had already, in 1918, led to the production of an experimental one-man balloon designed to operate with all its stores, gas reserve, and personnel in the equivalent of three lorries; a winch to cross any country without reference to roads is also within sight. For such a balloon, which can accompany Artillery anywhere, there is an obvious part in close connection with, and even as an integral part of, the gunners' organization. But in the typical small war there is little or nothing to be feared for the balloon from hostile action; it can therefore be pushed as far forward as desired and affords the ideal *poste de commandement* from which the officer directing the operations can view the movements of his own and the hostile troops and issue telephonic instructions to his subordinate commanders.

As a means of dealing with night attacks the balloon is also available, for a type of flare, which will burn for five minutes and of which four can be carried by one balloon and fired from the ground, has been evolved; with this flare the ground is lit up for about five miles, and the surprise effect of a night attack can thus be largely negated.

CONCLUSIONS.

If balloons are to fulfil the many functions which have been outlined above, certain desiderata must be complied with. Firstly, the powers and the limitations of balloons must be thoroughly appreciated by the higher command; it was demonstrated in France that personal experience in a balloon by group and battery Artillery commanders improved the co-operation a hundredfold; it is to be hoped that it may be possible for senior staff officers to make ascents at Army manoeuvres and so convince themselves and others of the value of personal observation and direction of movements from the balloon.

The complexity and responsibility of the work to be done implies that a very careful selection of observers must be made; the first requirement

is a scrupulous honesty and accuracy; after that endurance, good vision, and a wide professional knowledge. The comparatively passive nature of the work is better suited to men of 30 and over rather than to the younger ones, who are so especially suited to aeroplane work.

Much remains to be done on the technical side to improve performance, but without a first-class man in the basket it is useless to expect results.

I am only too conscious of the many gaps in this discussion, but in the limited time available it is not possible to go into the extremely interesting experiments of fitting a balloon to a "K" class submarine, into its uses for meteorological purposes and as an air buoy, and into the possibility of fitting a director, or at any rate a range finder, in the basket.

If this lecture stimulates even a few to take a personal interest in the possibilities of this arm and induces them to make personal trials of it, I shall feel that I have not altogether wasted your time.

DISCUSSION.

DR. MILLER MAGUIRE: Ladies and Gentlemen. As one who was very nearly destroyed by aerial efforts on London on the part of our enemies, without going as far as the Somme Valley or otherwise, I must express my surprise at the silence which has suddenly fallen upon the meeting. The Lecturer has shown us on the screen maps that have been drawn from a balloon, a thing that I should scarcely ever have expected to be done myself. The gallant Lecturer has told us what the balloon has done for the Navy. Anything which facilitates the work of our Navy, to even a small degree, and which tends to spare the lives of any of our sailors; anything which is of assistance in the way of reconnoitring, and by way of fixing the enemy's position and of ascertaining the result of our fire, must be of invaluable help to the Navy; and if my memory serves me right, every one of those functions has been admirably discharged by these balloons. Anything like that is really priceless to a nation like ours which depends for its existence on the efficiency of our sea warfare and combined Naval and Military operations. Surely the Navy is the breath of our nostrils. We realise that more and more every day. Some nations are envying us our Navy and intend to destroy it if they can; but if officers like the gallant Lecturer warn us beforehand, and if we take their advice; if we spend some money on training competent ascenders and descenders and observers and photographers, they will be worth £100,000, £200,000 or £1,000,000 each if we get into serious trouble again in regard to our shores. The gallant officer has shown us pictures of the Valley of the Somme, of the Vimy Ridge, and Messines, where some friends of mine were engaged in blowing a gap in the enemy's defensive system, and he has shown us how the barrage worked. We could not have learned as much by reading twenty editions of a standard work as we have learned this afternoon by listening to the lecture and looking at the illustrations that have been shown on the screen. We have been taught tactics and strategy, because the air has strategy, I believe, just as much as the land. Things have changed a great deal compared with twenty years ago. We now have fights under the waves and over the land, and the gallant officer has told us that he has observed the action of waves, winds and lightning; in fact, he has shown us pictures of lightning destroying one of these balloons. That alone was worth coming to hear the lecture. I congratulate the Secretary of this Institution on being in the chair to-day. I congratulate the gallant officer on giving us such an excellent lecture, and I congratulate you, Sir, for arranging such an interesting series of lectures

as we have had in this theatre during the past few weeks. I wonder there have not been crowds to listen to them. The lecture has been one of sublime interest. The gallant Lecturer has lived up in the sky, has told gunners what to do on the land; has watched the waves; has watched the periscopes of little new-fashioned instruments of death called U-Boats, and has told us what happened to them. This is a lecture of lectures, on which I congratulate the Lecturer, and I congratulate myself on being present to hear it. I congratulate him on the inestimable services he has rendered to the country and to people like myself who had to stay at home. I congratulate the gallant Lecturer on enabling future generations of British officers to start where their fathers ended with regard to these matters. May I propose a most hearty vote of thanks to the gallant officer for his lecture.

CAPTAIN H. T. A. BOSANQUET, R.N.: I should like to refer to one subject which the Lecturer mentioned, namely, the use of range finders. Unfortunately, during the whole of the war it was not found possible in Naval operations to find any range finder from a balloon which gave any accurate result whatever. If any such instrument had been discovered I believe range finding for the Fleet would have been absolutely revolutionised, because accurate ranges and direction could have been found for the guns of the Fleet before the enemy themselves were in sight, from the observing positions at the mast head. There is one other point I should like to refer to, namely, that no proper use was made, I believe in France or elsewhere, of two balloons observing from the ends of a base. I myself and one or two other officers, one of whom is here to-day, endeavoured for a long time to get the principle of observing balloons at the end of a base taken up, but nobody would take it up at all, and single balloons always observed. You cannot get accurate observation with any particular instrument from one balloon, but from two balloons we were able to get some very excellent results, particularly at night. I was not able to try it at the front, because I was not allowed to, but we carried out some experiments at Lydd one night; and, under most difficult conditions with a low ground mist which obscured everything, we were able to get within an accuracy of 100 yards at an 11,000 yard range, observing with two balloons at the end of a base of five miles, which I think was very good. I hope that if consideration is again given to the use of balloons, attention will be directed to this particular kind of observation, which was almost neglected in the late war.

AIR-COMMODORE BROOKE-POPHAM: I am afraid I have not anything of interest to add to Captain Worthington's very interesting lecture. I think he has said almost all that can be said on the subject. There are, however, one or two things to which I might refer, the first being the peculiar difficulty that kite balloons laboured under in France. They were rather unpopular with our own troops because they had the unfortunate habit of attracting the artillery fire of the enemy. That of course was a compliment to the balloon in a way, but in some cases it militated against its effective use. Another point to which I should like to refer is the mobility of balloons. The question very often arose in France, of trying to make them more mobile. One of the difficulties we were up against was in designing a suitable winch that could go across country. A second difficulty was that at the time the balloons were moving there would probably be a great number of aerial telegraph and telephone wires being put up, and the signal people considered that if we tried to move the balloon across country at that time all the communications would be very seriously interfered with. Neither of those two difficulties would apply in the case of small wars, and I think the point the

Lecturer made of the possibility of having a balloon operating close behind the troops in a small war is a most excellent one. Another difficulty that was experienced in France was the amount of hydrogen that it took to inflate a balloon. A hydrogen tube is a very heavy thing, and a balloon requires the contents of a great many of them before it is filled. If we can get a balloon that requires, say, only about one-fifth of the amount of gas that it takes at present, and which will take an observer up to two or three thousand feet, that obstacle falls to the ground; and I think that difficulty is at any rate in process of solution, if it has not actually been solved.

FLIGHT-LIEUTENANT P. WORTHINGTON, in reply, said: One of the speakers in the discussion mentioned the question of little use made of intersection. The greatest difficulty experienced in France in connection with the doing of intersection work at night was the difficulty of adequate telephone communications, and also the difficulty of making absolutely certain that the observations from the balloons were taken on the same flash. Had it been possible to synchronise the observations with the same accuracy that the Field Survey people were able to obtain on the ground, no doubt the use of balloons for locating hostile batteries at night would have been very much larger than it actually was. For day work the question of intersection was coming rapidly to the fore, especially in the north. I know of quite a number of cases in which intersection shoots were being done, although I agree that practically no instruments were used other than binoculars.

THE CHAIRMAN: Ladies and Gentlemen. It only remains for me to ask you to accord a very hearty vote of thanks to Captain Worthington for his excellent lecture. I am sure when this lecture is published in the JOURNAL it will be read by a very large number of the members and will be greatly appreciated. I think it is a lecture very worthy to follow the one to which I referred in my opening remarks, given twenty-five years ago by Major Baden-Powell.

The resolution of thanks was carried by acclamation, and the meeting terminated.



THE PHYSICAL AND ETHICAL VALUE OF BOXING.

By MAJOR H. F. S. HUNTINGTON, O.B.E., Welsh Regiment,
Assistant Inspector of Physical Training.

With Illustrations by the Staff of the Army School of Physical Training.

On Wednesday, March 17th, 1920.

MAJOR-GENERAL E. T. DICKSON in the Chair.

THE CHAIRMAN: I am afraid some of you who looked at the engagement column in *The Times* this morning will be disappointed to find that General Coupar is not here. Unfortunately he has been detained at Gibraltar on account of the railway strikes on the Continent. As I belong to the Council of the Institution, they have had to fall back on me as a substitute. Personally I am a very bad substitute because I know nothing about the science of boxing, although I am afraid I was rather a pugnacious boy.

LECTURE.

MR. CHAIRMAN, Ladies and Gentlemen: Before starting this lecture I should like to say that I feel very diffident in introducing such an apparently frivolous subject into the venerable portals of the United Service Institution. My excuse is the position that boxing has taken during the war and will take in the training of the recruit. Before I go any farther I should like entirely to dissociate this discussion and demonstration from civilian boxing. All we are concerned with this afternoon is purely Service boxing, and how it affects the Services. Boxing in the Services is purely amateur and no money prizes are allowed, and the aim of the Imperial Services Boxing Association is to get as many people boxing as possible, because it is realized that the same qualities which go to make a good soldier go to make a good boxer. Let us just for a minute consider these qualities. First of all there is obviously courage. We need not discuss it so far as war is concerned, but so far as boxers are concerned a man requires courage to take a beating and still come up for more. The next thing is self-denial and discipline. In the boxer you want considerable discipline; he has to give up smoking and drinking and live an abstemious life and do what his trainer tells him. Discipline in the Army is: "Do what you are told by the people above you." The next thing is to keep

yourself fit. An unfit soldier is useless to his country. We have had a lot of talk from people in high places about a C.3 nation. The next thing is quick co-ordination of mind and muscle ; that is, to see an opening and take it quickly. A very good example of that is the French boxer Carpentier. Any of us who have played any game, not necessarily boxing, but football or any game of that sort, will know that after a game we have said to ourselves : " By Jove, if I had only taken those openings and done such-and-such a thing, what a difference it would have made ! " because when an opening occurred our mind was too slow to react on our muscles, and by the time we attempted to take the opening it had gone. I should think in the case of a man like Carpentier his co-ordination of mind and muscle is so good that after a game or a boxing match he very seldom has any regrets of that description, because when he sees an opening his mind acts so quickly that he takes it. That is the very thing that is required in a soldier. You get an order and you have to act on it quickly, and you have to see the salient point of the order and get on with it. It is exactly the same in boxing. The next thing is self-control, keeping your temper and your feelings generally under control. A man who loses control of himself and his temper in the ring is as good as beaten, and he is equally a danger to himself and to his comrades in war. You see practically the same qualities are required in a good boxer as are required in a good soldier.

Instead of giving a long lecture on this subject, I am going practically to demonstrate all the points, because I think you will agree with me that most of us take things in very much better by the eye than by the ear, so that practically the whole of this lecture is going to be a demonstration. But before I go on to the demonstration I want to make it perfectly clear what the objects of the Imperial Services Boxing Association are. The objects are, in the first place, to encourage boxing among the masses in the Services in a purely amateur sense. The second thing is to praise pluck and sportsmanship in the boxer even over skill. In the Army we do not aim at having one or two very skilful boxers ; we may almost go so far as to say that we do not even care if we have one or two skilful boxers. What we want is a mass of men who can box and box in a sportsmanlike way. In other words, we want to encourage men to prefer to lose rather than to win by doubtful means. I particularly want that to be taken as the keynote of the boxing in the Services. We would rather a man lost than won by any doubtful means. Boxing, properly organized and governed, is encouraged in the Services by those in authority, because it is considered to be a great aid in forming a man's character.

Now that is practically all the talk I have to do. If anything crops up I shall be glad to answer any questions touching on the subject of boxing in the Services.

Now with the aid of Company-Sergeant-Major Norton and Sergeant-Instructor Mather, of the Army Physical Training Staff, I propose to demonstrate the rules of the Imperial Services Association. The rules speak for themselves and show how the qualities aimed at are encouraged.

And, by the way, it may interest you to know that the two instructors demonstrating to-day have fought altogether six times. Sergeant-Instructor Mather has considerable advantage in years and he has won three times, and Company-Sergeant-Major Norton has won twice, and they have had one draw.

When any of us go to a boxing show we are always struck by the number of people among the audience who have not the very faintest notion of what the rules are and what a hit is, and in the first place we will show exactly what the target is and what you have to do if you want to make a point. Inside the red line of the jersey worn is the target and a blow properly delivered within the red line constitutes a hit and a point. There are two bulls'-eyes: first of all the point of the chin and secondly the mark.

The next thing we will demonstrate is actual clean blows. That is what we want to encourage—clean hitting and nothing else.

Next we show what guards are. As a matter of fact no points were scored in that demonstration because every blow was guarded either by the shoulder or by the arm.

The next thing is the open glove. Some of these things are very simple and I must apologize for them, but we must touch on them for a moment. Hitting with an open glove is a very common foul and arises from a number of reasons. The first is that, when people are novices, to avoid hurting each other or getting hurt themselves, they hit gingerly and carefully with the open glove, and secondly they think they get a longer reach, and thirdly, when you get into some lower class of civilian boxing, they hit with the open glove because they think they can cut their man's face and hit him with the palm of the hand and generally foul. In the Service boxing we insist on men hitting the right way, and that is with the knuckle parts of the gloves. We will now have an example of the open glove hitting. Those, of course, are rather obvious blows, but any sort of open glove hitting is bad and should be stopped at once. The action of the referee on each of those occasions is to stop the fight and caution the offender.

The next thing is partially-guarded blows. You very often see a fight in which a man is trying to hit the other and partially succeeding in hitting him, but the other man partially guards the blow. If you were scoring you would have to make up your mind how many you would give the man. Perhaps he gets in four blows partially guarded and you might give him one or two points according to the value of the blows. You see people get in the ring sometimes with no idea of the right way of hitting and they indulge in what we call the "push hit," which is a foul.

The next thing we have is the method of scoring. Under Service rules the scoring is done in this way. You only keep the score in your head and put nothing down while the round is in progress. You practically score as in golf. I will demonstrate it to you and I think it will be easy to show.

That was a very simple demonstration. When you actually see a fight the blows would be far harder to see. Sometimes you get a man who goes into the ring and delivers a hurricane of blows, none of them properly delivered and most of them fouls, while the other man delivers a few good blows, and we will have an example of that. Practically every blow Blue delivered then was a foul blow and the action of the referee in that case would be to stop the fight and caution Blue for hitting with the open glove.

Sometimes you see a fight in which a man intends to get in and win, but in another case you sometimes see a man who is trying to bluff the referee into thinking that he is attacking when he is doing nothing of the sort. He does not intend to attack, but he is putting in time. We will have an example of that.

We hear a lot of talk about good generalship and we will have an example of what good generalship would be. Take, for argument's sake, that Wells was fighting Beckett; it would be good generalship on the part of Wells with a long reach to keep Beckett away from him and keep him out, while the good generalship on the part of Beckett, a shorter man and probably better at in-fighting, is to get inside the tall man's reach and have a fight. In this demonstration every time the Blue man with the short reach tries to get in Red sticks his left out and stops him. It is obviously Red's policy not to have a fight when he can beat the other man on points at a distance, and it is obviously Blue's idea to get in at him somehow.

The next demonstration is to show when a man is down and out. There is no doubt about that—Blue is down and out. His head hit the floor. There is no mystery about it. When you hear a man's head hit the floor with a bang you are pretty certain he is finished, and you can stop the fight. If a man gets hit and looks round for a comfortable place to go down, he has probably no right to be on the floor and the referee should see that he gets up in good time. Under Service rules it is absolutely essential to stop men who are plainly novices being knocked about. If a fellow gets knocked down and he is a game man, his natural instinct probably is to get up, whether he is in a fit condition to go on or not. It is to everyone's disadvantage if you allow the fight to go on and let the man who is game enough to get up, although not in a fit condition, be hammered about. The referee keeps the other man back and does not let the fight go on until he is perfectly convinced that the man who is knocked down is in a fit condition to go on. A man may be on his feet and yet out. The definition of "out" is if any part of the boxer's body other than his feet is touching the ground. But you may have a man held up by the ropes when no part of his body is touching the ground except his feet. The referee should not allow the fight to go on until that man is in a fit condition. Under Service rules the time-keeper, from the moment a man goes down, counts to himself just the same as if the man was on the ground. When a man is over the ropes, although nothing but his feet touch the ground, he is out, just as if he

was on the ground, and the referee will make the other man stand back until the man is in a fit condition to go on.

The next thing is that no blow may be delivered below the belt. If it is, it is a foul and the man is disqualified. It is possible that the recipient of the blow may get a low blow and it may be his own fault, either because he guarded the blow down or because he jumped up as the blow was delivered.

The next thing is holding and hitting.

Then there is a good hand-shake and a bad hand-shake before starting. It is an unpleasant and unsportsmanlike kind of foul to shake a man's hand with one hand and hit him with the other. Any of you who saw the fight for the King's Trophy at the Albert Hall saw a very unpleasant thing against an Australian. The other man seized hold of his hand with the right hand and hit him with the left and knocked him silly, and the man never recovered. The referee did nothing whatever, and the Australian was beaten. It was a peculiarly unpleasant foul. That sort of thing, hitting when shaking hands, nearly always comes from an improper shaking of hands. It is most essential to insist on good sportsmanship, and the only way to start the fight in the right spirit is by a jolly good hand-shake. Fellows who go into the ring and do an apology for a hand-shake which is not a hand-shake at all generally develop into men holding with one hand and hitting with the other. Anyone who has any connection with boxing in the Services should always insist that a fight starts absolutely with a good hand-shake and ends with a good hand-shake.

The next thing is holding round the neck, pulling the man's head with one hand and punching with the other. The referee should stop the fight and caution the offender, and if he does it again disqualify him.

Then there is holding under one arm. The action of the referee in every case of such fouls is to stop the fight and caution the offender.

Under Service rules a man may not hold the ropes with one hand and hit with the other in order to get a greater leverage.

The next thing is pushing the head back, which is rough play.

Then there is slinging an opponent. Wrestling in any form is not allowed and slinging your opponent is a foul. You caution him the first time, unless the man was damaged, and then you disqualify him.

The next matter is a thing we often read about in boxing papers—the rabbit punch, or hitting a man on the back of the neck. You get a man who probably covers himself up and you have no point on which to hit him except the back of his neck, and you may hit him there so long as you hit him in the right way. It is perfectly legitimate to hit the man with the knuckle part of the gloves on the back of the neck. That was used by Jimmy Driscoll at the National Sporting Club. But unfortunately you get the rabbit punch used in an unfair way with the heel of the glove, and that is a very bad foul.

The next is the kidney punch. That is not allowed under any conditions whatever under Service rules—so that we need not go into

it except to show it. It is a very dangerous thing; you may injure a man for life.

Then there is the pivot blow, which is a foul. People will argue that it can be delivered perfectly fairly, but it nearly always degenerates into a man hitting with the wrist or heel of the glove, so that under Service rules it is absolutely barred as a foul.

Then there is using the elbow after missing a hook. Sometimes you get an unpleasant sort of fellow who does not fight in a sporting way and pretends to deliver a hook, but he intends to hit the other man with the elbow. He misses his punch and comes back with the elbow. That is a very bad foul.

Then you get a man very rough in the ring who charges his opponent. You can generally tell whether a man intends to hit his opponent or is trying to charge him with his shoulder. If you see a man's hands behind him you will be pretty sure that he is up to no good. If he was doing the thing in the right way and was intending to punch his man he would have his hands in front of him.

You get a type of man who ducks a blow and uses his shoulder immediately after, and you can tell he does not intend to hit by the positions of his arms; he is simply intending to use his shoulder, a very bad form of foul.

Now we will show a man who rushes on his opponent and gets him by the shoulder, but it is entirely his own fault. He rushes on to his opponent, who ducks—perfectly legitimately—and the other man gets his shoulder in the chest.

The next is an unpleasant kind of foul, that is, using your knee and the other man's thigh. It has a very paralyzing effect. It is a foul you do not often see, and a man should be dealt with at once who was guilty of anything of that kind.

Then there is the foul use of the foot, treading on a man's foot and punching him at the same time.

Sometimes you see a man who gets into a ring with no intention of having a fight. All he intends to do is to waste time. He has various unpleasant tricks as well. That sort of gentleman you want to caution at once and have him out of the ring if he does not amend his ways.

There are various forms of shady tricks, such as a man who does not like being hit and every time a man threatens to hit him he pretends to slip. He tries to bluff everybody by looking for rosin on the floor. The action of the referee in such a case is to stop the fight and caution the man, and if he will not fight to send him out of the ring.

Another form of unpleasant trick you occasionally see sometimes arises from ignorance or from the man having seen the front page of a boxing magazine and proceeding to copy it. What you want is perfectly clean boxing. You do not want a man who tries to put the wind up his opponent by various means.

There is a very unpleasant thing which you see in low class boxing shows. Two fellows have had something of a fight and they are so relieved at not being more hurt that they get up and embrace each other.

It is most unpleasant to look at and the only thing is to stop the fight and tell the offenders off at once.

Another unpleasant thing, which is not sporting, is after a fight for the man who has won to pat the other man on the back in a patronising way. Some recruit sees some well-known boxer do it perhaps and he thinks it is up to him to copy it. Anyone who has anything to do with running boxing in the Services has to stop it at once, because it does not do boxing any good. In the Services most of the boxing you are dealing with is between novices, not skilled professionals, and you have to model your rules accordingly, and one of the rules is the correct way to stop a bout. You see in that demonstration one man looked round and the other man seized the opportunity and knocked him out.

If you have a man holding you do not stop the bout at once and caution the offender, but wait until the other man has finished scoring.

From the Service point of view, if a referee cannot control a fight from outside the ring we do not want him as a referee at all. We do not want a man in the ring having a sort of wrestling match. It is quite possible to have a fight without the referee getting in. If you have a referee in the ring there is likely to be trouble. The referee's mind and movements and everything else might be disconcerting by pulling the men apart when they clinch, and just as he is going between them one man gives the other a punch which the referee is unable to see. While on that topic I might mention the question of the use of the term "break away," or "break," or "step back," or any equivalent term of that sort. Under Service rules the referee will not use any term of that sort, because if a situation arises in which two boxers are not hitting—in other words, one or both are holding—the referee will stop the fight at once and caution the offender or offenders as the case may be. If you go in for using the term "break away" you more or less recognise holding, and of course it is a far easier thing to do. If you have two men fighting and one or both are holding, it is far easier every time they get close together to shout "break away" or "step back." The referee has not to differentiate as to who is holding. Under Service rules that is not allowed. If they get into the position of holding the fight is stopped and the offender or offenders are cautioned, because it is considered that a man should be fighting all the time. He is either out-fighting or he gets in close and is in-fighting or he goes back and is still fighting, but if he is holding he is committing a fault. That is a point which is not always quite clear.

Another small point is the seconds. You read in books of seconds throwing the towel into the ring, or the sponge into the ring, or something into the ring—whatever it may be. The function of seconds under Service rules is simply and solely to get their men ready for the next round. They may do absolutely nothing while the fight is in progress. They may not wave their arms, whistle or bang the stage, or make any noise of any sort, or make any signs, and they may not

throw the towel or sponge into the ring. It is considered that the man in charge of the whole show is the referee, and if his power is gradually whittled away by seconds throwing towels into the ring and mysterious people getting up and talking the referee's position becomes untenable.

There is another thing in which the Service rules differ to a certain extent from civilian rules, and that is in the silent count. We have to remember that the object of boxing in the Services is to encourage the game man, and if the game man gets knocked down his instinct is to get up at once and have a fight, whereas the cunning fellow who gets knocked down has the instinct to take the longest rest he can. If you are going to count out loud the cunning fellow has the advantage every time. He gets knocked down and takes a rest up to eight seconds, whereas the game fellow the moment he is knocked down instantly springs up and goes on fighting, although he may not be in a fit condition. So that the game, honest boxer loses every time if you have the count out loud. In some civilian boxing you hear a crowd making a noise like a dog fight and probably you cannot hear a word, and the timekeeper stands over the boxer counting loudly, but it sounds to the man on the ground as if he were saying: "Get up; get up; get up"; and finally the man gets up, although not in a fit condition, and he may be absolutely put off boxing ultimately.

The last thing I want to show is the way to take a decision. It sounds very simple, but there are certain ways of doing it. You can have a bad winner and you can have a good winner. There is only one way to take a decision, and that is in a sportsmanlike way, and if you have anything to do with boxing you want to insist on the thing being done in the right way.

DISCUSSION.

Replying to one or two questions asked by the audience, MAJOR HUNTINGTON said: If in a fight between two boxers the men were leaning on each other they would be both at fault, and the referee should have stopped the fight and cautioned them. What they are there to do is to hit.

With regard to the question as to the value of long legs or short legs in a boxer, it is impossible to lay anything down. You may get a man with short legs and a long body who is very agile, and you may not. It is difficult to generalise.

THE CHAIRMAN: It is my pleasant duty to ask you to show our appreciation of the Lecturer's address. As I said, I am far from being an expert, but I have always throughout my service in the Army endeavoured to encourage all manly sports, not only because they are most conducive in fitting a soldier for his hard life, but also, as I have found from practical experience in my own regiment, they keep men out of hospital. I have served in every climate and there is no climate where you cannot allow men to go in for all sorts of manly sports. Boxing is reduced to such wonderful science now that everybody can go in for it, and my only regret is that I cannot put back the clock and have a bout myself. One remark the Lecturer made reminded me of something I heard very many years ago. Lord Wolseley was in the War Office at the time, and had something to do

with the Auxiliary Forces, and he sent round an order to the effect that it was much more important that all the Volunteers should be got out of the third class in musketry, than that a few Volunteers should win prizes at Bisley or Wimbledon. The Lecturer has very aptly put the same idea into his lecture on boxing, and I am sure we shall all agree with him that it is very much more important that the mass of the men in the Army should learn to box tolerably than that we should have a few people ready to go into the prize ring and win large prizes. I am sure you will join with me in according a very hearty vote of thanks to Major Huntington for his very interesting and instructive lecture, and a very hearty vote of thanks to Company-Sergeant-Major Norton and Sergeant-Instructor Mather for the delightful way in which they have demonstrated the lecture.

The motion was carried unanimously.

MAJOR HUNTINGTON: Thank you very much.



RECENT EVENTS ON THE ASSAM FRONTIER.

By LIEUT.-COLONEL J. SHAKESPEAR, C.M.G., C.I.E., D.S.O.

Wednesday, April 14th, 1920, at 3 p.m.

GENERAL SIR E. B. BARROW, G.C.B., G.C.S.I., in the Chair.

THE CHAIRMAN : Ladies and Gentlemen. I am afraid there is not a very big audience to-day, but that is not really a matter of much moment, because the lectures that are given in the Royal United Service Institution have their effect not in the actual Lecture Hall, but with the outside public of the Navy and Army. It is through the JOURNAL of the Institution that the Navy and Army receive the very many valuable and instructive lectures that are given to this Institution. I may say that when our genial Secretary invited me to act as Chairman at this meeting I could not help feeling that for once he had made a mistake, as I know absolutely nothing about Assam, it being the one province of India in which I have never served. Nevertheless I was very glad to have the opportunity of presiding, for the reason that it enables me to testify to the admirable work which has been done on that North-east Frontier by many officers who are unknown to fame, and by a Service which has enriched the annals of India with many names that are locally notable, though unknown to the general public. The opportunities that Assam provides for exploration and for civilising work among the indigenous tribes are exceptional, and had this Frontier had the same limelight thrown upon it as the more dramatic situations on the North-west Frontier have attracted we should have heard a great deal more about the work that had been done there. All I can say is that the services of the Frontier officers on the North-east Frontier have been of exceptional value to the Government of India, and prominent amongst those officers I may mention the Lecturer. I must introduce the Lecturer to those of you who do not know him by telling you that, after his long service in Assam, he happened to be at home when the Great War burst upon us. Of course, as might be expected of him, he at once volunteered for service, and shortly afterwards was selected to raise and command the 18th Battalion of the Northumberland Fusiliers. In that capacity he did great service. He went out to France in 1916, and remained in France in command of the regiment, until on this very day two years ago he was unfortunately wounded, receiving an honourable wound the effects of which I am afraid he will carry to his grave. I will now ask the Lecturer to address you.

LECTURE.

IN all the dealings of Government with any of the tribes round the settled and revenue-producing plains of Assam, Silchar and Sylhet you will find two schools of thought : one in favour of advancing our borders and exercising some sort of control over the adjacent tribes, and the other

inclined to draw a line and have nothing to do with the people who live on the other side of it. As a rule I think that you will find that the man on the spot is inclined to extend his borders, and that the objection to his doing so increases in proportion to the distance that the authority concerned is from the frontier. Though I recently met an officer on leave from a frontier district who maintained that it would be a great pity if by extension of our control all head hunting and such like diversions were put a stop to, for he said he had many good friends among the head hunters across the border, and that they were far pleasanter people than the controlled folk. According to his view, life in those regions was free and delightful and the feeling that a morning stroll might lead to your head decorating a post in the village on the opposite side of the valley lent a zest and interest to life, which we entirely miss.

Be this as it may, the fact remains that it is very difficult to get Government to extend its borders. Take the case of the Naga Hills district. We took over the adjoining plains about 1830. The Nagas raided consistently; we tried punitive expeditions, we tried leaving them alone. Both experiments failed, but it was not till 1866 that we moved into the hills and administered the portion adjoining the plains; since then, in spite of every effort on the part of Government to avoid it, the area under administration has steadily increased till now on the south-east it has just been made to touch the administrated area of the Upper Chindwin district of Burma, and farther north it is within 60 miles in an air line of that river.

On the British side of the border life is safe and peaceable, on the other side, not a stone-throw distant, raiding and head hunting are the main objects of life. Yet these trans-frontier folk are on good terms with our officers and frequently come to them to have their quarrels settled, and it is curious to read that many of them volunteered for the labour battalion raised for service in France. In fact, some men who know enough of the district to make their opinions worth consideration, maintain that the trans-frontier tribes now appreciate the fact that we can at any time take over their country, but that we do not wish to do so and shall not do so as long as they give us no provocation. Certainly this part of the frontier has had but a dull record of late: only six minor expeditions in this century, and the last seven years ago. The memories of savage communities, however, are very short, and as the next generation grows up I prophesy a recrudescence of hostility, unless the frontier officers are allowed to maintain their influence and prestige by friendly visits into the unadministered tract. This can well be done without assuming any responsibility for its control or administration.

To the south of the Naga Hills we come to the picturesque little State of Manipur, which has been the scene since the end of 1917 of considerable activity, to arrive at the cause of which we must go back to the middle of the last century, when certain wild folk began to penetrate into the southern portions of the Manipur State. The State authorities were considerably alarmed as the strangers seemed likely to cause much trouble. The Political Agent in Manipur at that time was Major W. McCulloch, one of the strong men of his time, who has left a name which is still mentioned with mingled love and awe in the scene

of his former labours. As the Manipur State was in no condition to prevent the entrance of the Thado tribesmen the Maharajah wisely left the arrangements to be made with them in the able hands of McCulloch, who settled them in various parts of the hills, where land was available, and all went well for some time. The Manipur State found these immigrants very useful as a kind of unpaid militia when any other tribe was inclined to be troublesome, and it governed the Thados by a mixture of bribery, treachery and bluff. After some time the Thados, or to use the ordinary though incorrect name for them, the Kukis, grew restless, and some of them left the State and entered the unadministered Somra tract and established themselves there by force of arms, and thence they troubled the Naga Hills, the Upper Chindwin district and generally exercised a disturbing influence on their fellow tribesmen in Manipur. Various expeditions were sent to deal with them, which inflicted a certain amount of punishment, but it had no lasting effect. As long as the tract they inhabited remained unadministered they formed a nucleus of unrest and rebellion. The Thados, who remained settled within the State boundaries, were fairly well behaved, but were inclined to be truculent. But there was no sign of any serious trouble, when, without any warning, the Chins round Haka rose and besieged that post on November 30th, 1917. Owing to the war all garrisons were at their lowest and reinforcements were hard to find. Burma applied to Assam and though the Assam Military Police were also, owing to large drafts sent to the regular army, short of trained men, two columns, each of 150 rifles, were at once dispatched.

The doings of these columns is beyond the scope of my paper, but they were busy in the Chin Hills for many months, and did not return to their headquarters till late in July. They had much desultory and some hard scrapping and suffered a good many casualties.

The Kukis in Manipur territory and the neighbouring unadministered Somra tract, encouraged, no doubt, by exaggerated reports of the successes of the Chins and of the weakness of the Sirkar's armed forces, suddenly rose and at one time it seemed possible that they might even attack Imphal, the capital of the State. As I have explained, the military police was very short of trained men. The regular regiment which used to garrison Imphal had long gone to the war, and the first efforts of the local forces to attack the rebels were not successful. The Deputy Inspector-General hurried to Imphal, and by January 20th, 1918, had things sufficiently in order to admit of two small columns, each of 160 rifles, taking the field. Burma also sent two columns to co-operate. Space does not allow of going into the details of the operations, but to give some idea of their nature I will give a brief account of one column, commanded by Captain Coote, with whom went Mr. Higgins, I.C.S., who had long been in charge of the Manipur Hill tracts. Colonel L. W. Shakespear, the Deputy Inspector-General, went with this column as a spectator. The column entered the hills on January 27th and at once came in contact with the enemy, losing two killed and two wounded in the first twenty-four hours, without seeing a single Kuki, the jungle being so dense. With the column was a mountain gun, which the next

day got a chance, clearing a village with one shot at 950 yards, but this did not prevent the enterprising enemy from bagging three coolies without exposing themselves. In due course the column reached the rendezvous and looked anxiously for some sign of the column which was to meet it from the Chin Hills, but alas this column had arrived some days earlier and suffered a reverse while trying to storm a stockade. Shortness of British officers had necessitated the column starting with only one British officer, which is never allowed if it can possibly be avoided. The British officer was severely wounded, and the coolies with the column got mutinous and the Indian officer, unable to control them, had no option but to return. All this Captain Coote learnt by helio from Lenakot, a post in the Chin Hills at which the column had just arrived. The enemy had vanished and Capt. Coote could only proceed with his programme of punishment. Several stockades were destroyed, villages and much rice burnt and many cattle shot, without anything being seen of the enemy, who nevertheless made his presence felt by constant sniping. On February 7th a pitched battle occurred near Khengoff. The path led along a narrow ridge, with very steep sides covered with dense thorny jungle. At one place it was crossed by a ridge of rocks, through which was a very narrow passage; this the enemy had closed by a strong stockade, and in front he had felled the jungle, forming a most formidable abattis. The only signs of the enemy were a glint here and there among the rocks of a gun barrel and some shouting and drum beating, but directly an attempt was made to cross the abattis a heavy fire was opened, and when the gun was brought up it was silenced after the fifth round by casualties among the crew. Efforts to get round the flanks failed, on account of the jungle and steepness of the ground, several men being wounded in the attempt. At last the left platoon, under cover of the fire of the adjacent one, got through or over the abattis and made a dash for the rocks, whereupon the enemy, like the Snark, softly and suddenly vanished away. After an arduous six weeks of this sort of work the two columns returned to Imphal, whence just prior to their arrival another column had started towards the south-west. The rebellion spread, the Kukis from the Somra tract joyously joining in. Burma co-operated from the Chindwin with columns from Manipur, and there was a good deal of fighting, Lt. Molesworth being killed. After 5½ months of trying work the weather forced the columns to return home, but the enemy was far from beaten. It was necessary to place posts along the Naga Hills border of the Somra tract and to keep a small column moving along the Manipur border till late in September. On the west of the State the rebels closed the road to Silchar, destroying the rest camps and murdering the peaceable Nagas who lived there. They even threatened Haflong on the Assam-Bengal Railway and caused much alarm in the tea gardens, and the hard worked military police had to find men for four posts which were established along this border and for a platoon to be stationed in the centre of the tract. I have explained how Colonel McCulloch settled the Kukis in various parts of the State. This made them difficult to deal with, their villages and lands being mixed up in a most confusing manner with those of the peaceable and inoffensive Nagas, so that when the crops of the truculent Kukis were burnt they

had recourse to those of their less warlike neighbours. In this first phase of the operations thirteen columns, aggregating 1,950 rifles of the Assam and Burma Military Police, had been employed almost continuously for six or seven months. A new plan was now evolved in consultation with the General Staff, and as it was felt that the operations were likely to be on an extensive scale, and that complete co-operation was imperative, a brigadier-general and staff was sent to Imphal to carry out the campaign under the G.O.C., Burma Command. The plan adopted was to divide the disturbed tracts into areas and place posts held by 40 rifles so as to prevent the rebels of one area co-operating with those of another; small columns of about 50 rifles harried them about and generally made their lives unpleasant. The work was to be done entirely by the military police, Burma supplying 3,000 and Assam 2,400. The Assam police were equipped with .303 rifles and trained in the use of rifle grenades and Mills bombs, and two more mountain guns were lent them. All preliminary arrangements were made by the civil authorities, and when Brigadier-General Macquoid arrived at Imphal on November 9th, the work of stocking the posts and advanced bases and getting the troops into position was well advanced, in spite of a severe outbreak of influenza, which nearly brought things to a standstill for a time. In December the Burma and Assam parties got in touch, and all columns were busy. The Kukis did not like the new way of playing the game. There were no long lines of coolies to attack, and while avoiding one column they ran into another or into a post. Captain Rundle, with a column composed of Burma police and Chin "Friendlies," got on the track of a rascal called Ngulkhup, and chased him over hill and dale, brushing aside his ambushes for five days, till despairing of escaping he surrendered to the post at Tamu, thinking that safer than trusting to Rundle's Chins.

Guns began to be surrendered and submissions to be made, but as unconditional surrender was the only terms offered the Chiefs, it was late in March before all were given up, and the operations were not officially over till May 20th, having lasted with but little cessation for 18 months. The area covered cannot be less than 6,000 square miles of very difficult country, and for much of the time the climate was none of the best and the enemy active and enterprising. The results gained were that one Chief was shot and all the important ones surrendered, 85 of the enemy are known to have been killed besides other probable casualties, 66 villages were burnt, 112 surrendered, 1,440 guns were given up, much grain and many cattle were destroyed. The Chiefs were tried by a special court and sentenced to various terms of deportation. The Military Police casualties were: Killed, 67; wounded, 149.

For sake of comparison, it is interesting to note that in the extensive operations of Generals Penn Symons and Tregear in the Chin Lushai Hills in 1889-1890, the total casualties in both forces only reached 99, and in General Bower's Abor Expedition of 1911-12 only three were killed and five wounded.

As a corollary of these operations Burma has taken over the administration of the Somra tract, so long a veritable Cave of Adullam, a secure haven for all rascals and a safe hiding place for guns when the search grew hot in any of the adjoining tracts.

We must now return to the Assam Valley. Travelling along the southern border, eastward from the Naga Hills, we pass various tribes included in the term Naga, who are generally well behaved, and then come to the Singphos, whom some class as Nagas. Through their country runs the route selected for connecting the railways of India and Burma, and eventually, let us hope, those of China. The Hukong Valley has been traversed many times, and I understand a new survey is now being carried out with a view to deciding finally on the line to be selected.

The actual boundaries of Assam being in many places undefined, it has been found necessary to fix the limit of the administrated area up to which Government admits its responsibility for the protection of life and property. This limit is called "The Inner Line," and by a Regulation passed in 1873 the Local Government is given power to prevent British subjects crossing this line. It is necessary to prevent over zealous individuals, missionaries in search of souls or prospectors in search of wealth, venturing into dangerous places where they are likely to be murdered, and throw on Government the burden of sending an expensive expedition to punish the crime. Even though such persons have gone at their own risk and contrary to Government's orders they must be protected or avenged, for a failure to do so would be put down by the tribes to weakness and certainly lead to further outrages, which if unavenged soon lead to others and more serious ones till they can no longer be overlooked and action is forced on the unwilling Government. Therefore it is certainly wise to control the intercourse with the tribes beyond our control, but it is open to argument whether in this part of the frontier this policy had not been carried too far. Even the Assistant Political Officer was prevented improving his knowledge of the tribes he was responsible for, and the levying of blackmail by Abors on wood cutters working within the inner line was winked at. In the early years of this century circumstances occurred elsewhere which led to the relaxation of the strictness of these orders.

In 1904 a very remarkable man was sent as Assistant Political Officer—Mr. Noel Williamson; he was one of my assistants for some years in the Lushai Hills, and thence he was transferred to the Naga Hills. Noel was one of the most likeable men I have ever known. He was a soldier at heart and spent some years trying to get into the Army, but though gifted with great tact, common sense and energy, he was not much good at his books. He joined the Bengal Police, and almost immediately afterwards was sent to the Lushai Hills. He early showed that he possessed all the qualities required to make a good frontier officer. Directly he took charge in Sadiya he began to make himself known to the folk around him.

In March, 1911, Williamson started on a second visit to Kebang, on the invitation of Takot, Gam or headman of that village; he was accompanied by Dr. J. D. Gregorsen, who was well known on the frontier. It has been amply proved that in sending the invitation there was no treacherous intention, and that all would have gone well had it not been for the foolish boasting of a native messenger who, to

enhance his own importance, told the people of a village in which he stayed the night on his way to Sadiya with a letter, that this missive was to call up sepoys to punish them for having stolen some rations out of the loads while Mr. Williamson was in the village. This alarmed the people so that they murdered the messenger and followed on behind Mr. Williamson, and finding Dr. Gregorsen in a camp by himself, killed him and the next day murdered Mr. Williamson also. So died one of the finest fellows I have ever met, who, had he lived, would certainly have made a great name for himself. This outrage led to the Abor Expedition of 1911-12 and, other circumstances contributing, to the road-making expedition up the Lohit Valley, and the exploration of the Mishmi and Miri country, in the same year. These have been fully dealt with elsewhere,¹ and I need not say more here than that the operations showed that, as so often happens, the nettle, if firmly grasped, does not sting. The resistance of the tribes was trivial, but the difficulties due to the awful country and the villainous climate were very severe.

The work begun by Mr. Williamson has been ably carried on by his successor, Mr. W. C. M. Dundas, C.I.E., who I am proud to claim as one of my assistants in the Lushai Hills.

The years 1912-13 and 1914 were busy ones on the frontier. It had been long known that the tribes actually in contact with us prevented those farther off from dealing with our bazaars, preferring to themselves occupy the lucrative position of middlemen, and the Abor Expedition had brought this fact and its many disadvantages into prominence. It had also brought out the sad state of ignorance we were in as regards the country immediately adjoining our settled districts and its inhabitants. With a view to remove these defects in the cold weather of 1912-13 two expeditions were sent to explore and survey (1) the drainage area of the Dibong, a large tributary of the Brahmaputra; (2) the similar area of the Dihong, or main stream of the Brahmaputra, as far as the famous gorge by which the great river breaks through the Himalayan range. Both these were entirely peaceful missions, but, of course, the possibility of trouble arising had to be provided against. The Dibong party was under command of the late Major Bliss, 8th Gurkhas, who had long been employed as Commandant of the Naga Hills Military Police Battalion and had much experience of such work. The fighting force consisted of 300 rifles from his battalion and the Lushai Battalion; the political officers were Captains G. A. Nevill and F. M. Bailey; there was a strong survey party, and last, but by no means least, 1,300 coolies organized into regular corps. The concentration was not completed till November 29th, and the force was completely demobilized on June 8th following. Owing to the late date at which Major Bliss received his orders—October 22nd—it was impossible to commence earlier, which was a serious handicap, as November was fine, but from the middle of

¹ "Abor Expedition: Geographical Results." A. Bentinck, Royal Geographical Society, December 2nd, 1912. "On the Track of the Abor," Powell Millington, 1912. "In Abor Jungles," Angus Hamilton, 1912.

January to the end of the time the surveyors were out, only eighteen days could be classed as good and clear for survey work. During the remainder it was called a good day if a couple of hours' work could be put in. One party, in attempting to reach the Andra Pass, got snowed up, many cases of frostbite occurred, and one man lost five toes. Captain Bailey, with a small party, made a plucky attempt to struggle up the last ascent, but had to return after going only three miles in ten days. The party was always wet through and had great difficulty in keeping fires burning, as all the wood was wet and its only shelter was leaky waterproof (?) sheets. In spite of all these difficulties the tale of bricks was completed, and all the sources of the river surveyed right up to the great mountain chain, of which the main peaks were fixed; in addition 360 miles of excellent coolie track were made as far as the highest villages.

On April 28th an important bridge on the long line of communications was washed away and a serious disaster seemed imminent, but Major Bliss hurried to the spot, the politicals persuaded the inhabitants to assist in collecting cane, and, though this had to be brought long distances, by May 10th the military police and coolies had constructed a new cane suspension bridge, strengthened later with two wire ropes and pronounced the best in the country. In the meantime work was carried on without ceasing on half rations. Early in February reports were received of a savage and bloodthirsty community "as numerous as the hairs on your head." Nothing dismayed, the explorers pushed on to find at Mipi, a small settlement of Khamba Tibetans, one hundred all told, with a temple and village school, the most pronounced pacifists imaginable, who welcomed them warmly, and it was through them that Captain Bailey and Captain Morshead were enabled to carry out their wonderful journey from Mipi across the Yong Gyap Pass into the valley of Tsangpo, whence they eventually emerged via Tawang at the railway station of Rangya, in the Tezpur district, having covered in six months 1,683 miles, practically all of it through hitherto unknown country, without any escort, dependent for all supplies and transport on the people of the country, who till then had shown themselves the most determined to exclude all strangers; surely, one of the most remarkable performances ever accomplished. Captain Bailey gave an account of the journey before the Royal Geographical Society on June 22nd, 1914, and was awarded the Society's Patrons' Medal on May 22nd, 1916. I need not, therefore, say any more regarding this unexpected result of the Dibong expedition of 1912-13.

The Dihong survey party was very late in starting, owing to various causes. It was not till February 2nd, 1913, that Mr. Dundas was able to get off from Rotung, his advanced base. His first move was to Damro, the head village of the Padam Abors. The people were suspicious—a frame of mind which necessitated the use of the greatest care and tact. One important piece of information was gained regarding the attitude of Simong, an important village of the Panggi Abors, which posed, during the Abor Expedition, as extremely friendly and ready to assist a small party to reach the main passes beyond their

territory. Mr. Bentinck, the Assistant Political Officer to General Bower, was convinced of their sincerity, but during the interval Mr. Dundas had received reports which made him doubt them, and he now learnt that the people of Simong were intriguing with their neighbours with a view to resisting him, and had called in a certain individual known as Dopo, whose exact position it was hard to ascertain; but he was reported to be at Simong with a party of about 1,000 Menbas, i.e., Tibetans, armed with "guns which will not go off in the rain"—a graphic description of a matchlock.

Mr. Dundas would naturally much have liked to have gone on and put to the test the pluck of the Simong folk, but though he felt quite equal to the task he abstained from giving the boastful people a chance of provoking a conflict and deliberately went by another route. This was, I am sure, much against the grain, but he had orders to get the survey of the Dihong completed as far as the gorge and connect with the work of Captains Bailey and Morshead, and he knew that it would be impossible to carry out his orders if he gratified his longing to smash Simong.

The cause of Simong's desire to bring on a fight was that it had hitherto stopped all intercourse between the plains of Assam and the people living in the hills beyond and had occupied the lucrative post of middleman. The astute rascals saw that if we once got in touch with the folk beyond them we should soon make friends, and direct dealings would ensue and their middlemen's profits would disappear. If they could persuade the folk living beyond them that we were people with whom it was unsafe to have any dealings, except of a warlike nature, and embroil us with them they thought that their position might be maintained. The same tactics were pursued elsewhere and with some success; a column under Captain Hore, which was detached to survey the Siyom, being prevented getting in touch with the Bori tribe by certain villages spreading all sorts of rumours as to its terrible doings, among others that captives were sacrificed to "The Map." To these wild folk it was incredible that the Sahibs would go to all this trouble and expense just to gain knowledge, and they therefore thought that "The Map," of which they heard so much, must be some magical being, and were quite ready to believe that it required to be placated with human sacrifices. They therefore broke down all the ladders and galleries leading across a terrible precipice, thus forcing Captain Hore to turn aside.

On his return to Rotung from Damro on March 8th, Mr. Dundas found that, owing to transport difficulties, a whole month must elapse before he could move forward along the Dihong. An advance party consisting of some of the 10th Co. Q.V.O. Sappers and Miners, under Lieutenant Pemberton, R.E., and some military police and coolies, were working on the road and strengthening the Abor tubular cane bridges, but before an extensive advance could be made rations had to be stored at advance depôts, a lengthy business with only coolie transport. On April 13th the advance up the right bank of the Dihong was commenced in earnest. This bank was chosen partly so as to avoid Simong, but chiefly because it was said to be the better

route, and, moreover, led through country which had not been touched by the Abor expedition. The attitude of the first villages passed through was surly; they too had long blocked all intercourse with the plains and saw their lucrative monopoly likely to cease. Small as Mr. Dundas's force was, it was enough, coupled with the recollection of what had happened to their neighbours who resisted General Bower, to make the folk shy of opposing him; but throughout the advance the temper of these villages, Dosing and Riga, was uncertain, and must have been a source of serious anxiety, even to so cool a man as Dundas. Farther on, beyond the trade block, a very different state of affairs existed; our parties were warmly welcomed. On April 19th, Mr. Dundas writes: "Pemberton's bridge-making (over the Sire stream) was a wonderful sight, every man, woman, and child from Yogang and Gosang seemed to have come down to see it. Young men helping, old folk looking on, men drinking, women sewing and cloth making, children playing. It is hard to realize that we were in a country unvisited until this year. The people seem to trust us absolutely." Meanwhile Simong maintained its churlish attitude; at Robuk, on the far side of the cane suspension bridge, a guard of Simong men was stationed, and a long cane attached to the middle of the bridge enabled them to jerk off any unwelcome person who might attempt the passage. The mysterious individual called Dupo, already mentioned, impressed by the steady progress of the column and the complete disregard of Simong's threats, sent a stone with his seal on it and a message saying that he wished to be friendly, but Simong, who were his best traders, would not let him come to see Mr. Dundas. Later on he summons up courage to visit the camp and stays with the column for some time. He is described as "like an Abor but dirtier," and is said to have formerly held the post of tax gatherer under the Tibetan Government, from which he was dismissed, but not till he had amassed wealth. He remained on the frontier carrying on trading operations and making annual visits as far as Simong. He became very friendly and supplied much useful information; but he was in a difficult position, as he could not stop Dundas's advance, and yet feared that it would cost him his influential position with the Abors. So he tried in various petty ways to delay the progress of the column. Mr. Dundas, while treating him kindly and extracting much useful information from him, watched him closely, and records at their parting that Dupo is very sorry that he mixed himself up with the Simong folk, and adds: "I have told him that he and his Menbas had a very narrow escape of being hurt, and I think that he understands." Knowing Mr. Dundas, I think so too.

On June 12th a letter from Captain Bailey, written at Khàpu on the 5th of that month, was received. As Khàpu was no great distance away on the other bank of the Dihong, Mr. Dundas is able to record, with evident relief, "So the Dihong or Tsangpo will be mapped without a doubt."

On June 28th, just before starting on his last advance, Mr. Dundas received a report which might well have disturbed him: that Riga and Dosing, the two important villages far back on his line of

communications, were very disaffected, and that Simong had not done any cultivation—a sure sign of trouble brewing; but it only causes him to remark: “I do not think that any of these people really like our presence here, but, of course, I cannot wait on their likes and dislikes. We have just come through this country as if it belonged to us and the opposition has never been active. Simong has often been reported restless, but has never done anything active or effective.” And he continued his advance.

Transport difficulties, and shortness of supplies due to them, forced him to risk the breaking up of his already small party. Hamid Gul, surveyor, with an escort of six rifles, was sent up a hill, 12,992 feet, to wait for fine weather and map the Pematsiri Valley; Captain Trenchard, Survey Department, and Lieutenant Pemberton, with six rifles, were to attempt to cross the Doshang Pass and reach the Tsangpo on the far side. Dundas, with Captain Oakes, Survey Department, and Captain McDonald, I.M.S., with twelve rifles, was to push on as far as possible up the right bank of the Dihong or Tsangpo, the identity of these two being now at last proved beyond any doubt. Captain Sir George Dunbar, commanding the escort, with thirty-six rifles, remained at Yortong with the surplus stores, coolies, etc., and to watch our wily friend Dupo. Captain Trenchard crossed the Doshung Pass on July 2nd, reached Phea Doshang, on the right bank of the Tsang Po, on the 3rd, and was compelled to return at once owing to shortness of supplies. Unfortunately, bad weather interfered with trigonometrical and astronomical work, but a prismatic traverse was made of the whole route. The little party was hospitably entertained by the Tibetans at Phea Doshang. Mr. Dundas pushed on till July 4th and reached a point on the right bank beyond which further progress was impossible and from which he could see Khàpu, the place from which Captain Bailey had written to him on June 5th, so that the connection of the two surveys was assured. In fact, Captains Bailey and Morshead had actually reached Meto on the left bank exactly opposite Pema Tango on the right bank, through which Dundas's party passed on July 2nd; and they also reached Phea Doshang, making the connection very complete.

After a halt of a day at Chhangjug La the return journey was commenced on July 6th. The coolies were very near the end of their tether. Although when leaving Kopu on June 23rd only picked men had been taken, four days later 10 per cent. were sick; on 24th six miles took the poor fellows seven hours. The thoughts, therefore, of the long weary way, some thirty marches, which they had to go before they reached their base, cannot have been very pleasant, and they were not made pleasanter by the news that reached Mr. Dundas on July 7th that there had been suspicious meetings in many of the villages, and that they were reported to have come to a decision to attack all along the line. Mr. Dundas did not believe the story, and almost apologizes for mentioning it in his diary, but unfortunately an officer, possessed of a less calm temperament, cut the suspension bridge at Robuk, to which I have already alluded, and this caused trouble later.

On the 14th Kopu was reached, and messages from Simong were received, regretting that, owing to the cutting of the bridge, they could not send a mithan as a present, but, having killed it on their side, they sent over the flesh. They were very anxious to know who had cut the bridge, and why, and Mr. Dundas had to use much diplomacy in his replies. The next march, one of the shortest, took the poor weary and played-out coolies thirteen hours, although they had large numbers of local coolies to help them. Later, one stage took three days, 103 out of 288 coolies being either sick themselves or engaged in carrying sick men. On the 28th the Gams or headmen of Pangkang flatly refused to supply any local coolies, but this in no way perturbs Dundas, who records that the coolies turned up the next day, and adds: "Most of them laughing, great-bosomed Abor girls, halted at every stream and bathed. The women began well and all wore skirts; but it was a blazing day, and as it got hotter these were put on their heads to protect them against the sun, and their only clothing consisted of the benyop, a belt of metal discs of which the centre ones are four inches in diameter, gradually tapering down to three and even to two over the thigh bone. It is a much more modest dress than the description implies." At Riga there was more serious trouble about coolies, and though the people maintained a friendly demeanour they would supply no coolies to aid Dundas's exhausted men. The cutting of the Robuk Bridge, such a marked divergence from Dundas's policy of ignoring the threats of Simong, was looked on as a proof that he was afraid of that village, and this encouraged Riga. Though sorely tempted to destroy the village, Mr. Dundas refrained, as he very wisely considered it imprudent to start a conflagration, which would certainly spread to other villages, and which at that late season would be hard to deal with adequately. He therefore passed on, reaching his base, Kobo, on the Brahmaputra, on August 11th. Thus ended seven months of continuous hard work under the most adverse circumstances imaginable. Every object of the expedition had been attained, and, thanks to the forbearance and tact shown by Mr. Dundas and all the responsible officers, not a shot had been fired. The work of the Dibong and Dihong exploration parties had been so thoroughly done that the Chief Commissioner was able to report that no further extensive surveys were needed and that the Political Officer, with strong escorts, would be able to bring the tract into order on his ordinary tours.

The Lohit is an important tributary of the Brahmaputra which joins that river not far below Sadiya; its valley is apparently a little less difficult of access than those of the Dibong and Dihong, but lest it should be thought that it is easy going I may mention that in a survey report it is mentioned that a peak only eight miles from the river in an air line was found to tower 13,000 feet above it, giving a slope steeper than 1 in 4. I have already referred to Williamson's two visits to this valley, and while the Abor Expedition of 1911-12 was in progress Major Bliss and Mr. Dundas carried out a road-making expedition up the valley almost to the Tibetan outpost, Rima,

not far from which a notice board was found announcing that it was "The Great Pure Empire Boundary. Zayul Southern Limit."

During the following year the valley was brought under what is called loose control, and in January, 1914, Mr. O'Callaghan, one of Mr. Dundas's assistants, with a small escort, made a tour up the valley. Throughout the tour coolies for the carriage of rations and kits were willingly given, and the people showed appreciation of the new peaceful regime, which allowed of them moving about with a freedom hitherto unknown. Mr. O'Callaghan remarks: "At present the tribes are peaceful and law-abiding people, whose virtues, I sincerely hope, will not diminish in closer contact with civilization, to which they are now being introduced. We are gaining their confidence, and therein lies the bedrock of our administration." When the party was getting near the turning point of its journey a cordial invitation was received from the lay and clerical representatives of Tibet to pay them a visit at Rima. Though this was not within Mr. O'Callaghan's instructions, he decided to accept it; and it is satisfactory to hear that his decision met with the approval of the powers above him. On its way to Rima the party passed the notice board already alluded to and found another had been added, bearing the following inscription in Chinese and English: "The Southern Boundary of Cuan Tien Tsa-yu of C.R. established by the Special Commissioner Chiong Win Chin-Tsa Yu, June, 1912." Both these boards were removed. The reception of the party by the Tibetan authorities was most hearty, and hospitalities in the way of tea drinking were exchanged. The Chinese had ere this retired, and the Tibetan officials who had been expelled by them had returned. They were well up in the then recent negotiations at Simla, and inquired after the health of the Viceroy, remarking that they knew that Tibetan interests were safe in his hands. From Rima routes lead to Lhasa, forty-one marches, and to Menkong, on the Salween, said to be ten long marches for mules, and thence Batang, in the Ssu-Chuan province of China, can be reached in fifteen marches.

Rima, a wretched hamlet of about a dozen houses, is the extreme limit of Tibetan control, the country right up to there being in effective occupation of the Miju tribe, a branch of the Mishmis. Some distance from Rima, on the Assam side, is Walong, the proposed site of our frontier post. The importance of the spot lies in the fact that the valley widens out a little so that terrace cultivation can be carried out and sufficient rice to support the garrison can be grown, and there is no other place suitable for a post anywhere lower down the valley.

A bridle road was commenced and carried up the Lohit Valley and would ere this have reached Rima but for the war, which has stopped so many good works, but the last report of the people of the valley is satisfactory.

The war has also interfered with the complete establishment of our influence, in which such a good beginning had been made, in the other areas under the Political Officer. Doshang and Riga are still troublesome, and Mr. Dundas very justly remarks: "It is

impossible to exercise any control, however slight, unless villages are occasionally visited, and the people thus realize that we are not far off." At present a well-graded road has been pushed up the right bank of the Dihong as far as the junction of the Yambung and the Dihong, a distance of fifty-six miles from Kobo, General Bower's base on the river. Military police outposts are maintained at Pasighat, Rotung, and Yambung. It would appear wise to push this road on by degrees to Riga, about thirty-five miles, where we should really be in the centre of the Abors and should have effectually broken through the trade blocks, which are such a bad feature of the present situation. At present we are on the fringe of Aborland, and the good effect of our activity in the years 1911 to 1914 will be lost if we sit down and neglect the obvious means of maintaining the advantage gained with so much trouble and at considerable expense. Though prevented from visiting these distant parts of his charge, the Political Officer and his assistants have not been idle, and as far as they have been allowed to have strengthened their hold and extended their influence. Villages of all tribes within effective control have been assessed to poll tax without any trouble. I venture here to reproduce Mr. Dundas's final opinion of the Abors: "I have a poor opinion of the Abors in general, in opposition to their own very good conceit of themselves. They compare unfavourably with the frank, manly tribes on the frontiers of Assam. . . . They are fierce and windy in talk, but hesitate to act; proud and conceited one moment, to be servile and abject when tackled. These failings are due, possibly, to the relations which till recently have existed between them and the Government. They were left alone and told to behave themselves, in the hopes that they would do so. There has never been any settlement with the tribes as a whole as there was with the Lushais and Nagas."

We must now take a hasty glance at the recent happenings along the northern frontier of Assam farther to the west. In 1912 this portion of the border was placed under the political control of a single officer, instead of, as heretofore, being left to the officers in charge of the various districts. This was a sound move, productive of a better knowledge of the tribes and more sympathetic and uniform treatment. The management of the tribes was, in fact, made the whole-time job of one man, instead of the occupation of the odd moments of several. In December, 1913, Captain G. A. Nevill, the Political Officer, with an escort of 200 rifles of the Naga Hills Military Police, under command of Captain A. M. Graham, 5th Gurkhas, paid a visit to the Aka country, which had not been entered since 1884. The country was thoroughly explored and surveyed, 4,000 square miles being mapped, and the Akas, and a tribe called Miji, who spoke an entirely different dialect but were in other respects much like the Akas, though dirtier, received the party well; but in the course of its wanderings one detachment came in contact with the Daflas, a tribe living to the east of the Akas, and what might well have ended in a regrettable incident was only avoided by the steadiness of the military police escort. The little column reached the village

of Riang on March 6th, and, though there had been some signs that the Daflas were not so friendly as the Akas, it was allowed to pass through and camp on the far side, the inhabitants feigning friendliness. This was the limit of operations in this direction, and, the survey work being completed, the party on the 8th started the return journey. Its passage through the village was resisted, and though it beat off the attack without difficulty, the enemy hung on its flanks and rear all the way down to the Pachuk River, a thick mist, which descended suddenly, greatly adding to the difficulties of the situation, which were further increased by the smoke from the rifles, which hung in such dense clouds that, after a few volleys, nothing could be seen. The bridge over the river was found to have been damaged beyond repair, and the column had to retrace its steps some distance and then cut a new path down to a spot where it was possible to build a new bridge, which was completed by 2.30 p.m., and the whole force was got safely over by 3. To anyone who has had experience of jungle fighting this little skirmish must appear most creditable to all concerned, for the invisible enemy did not stop his attacks till the last man was safely across the new bridge. When the exploration and survey work was completed, Captain Nevill went on a friendly visit to the Tibetan Monastery at Tawang, a somewhat important trade centre, which you will recollect was the end of Captains Bailey and Morshead's great journey in 1913. Captain Nevill was warmly welcomed, and the little affair at Riang and his peaceful passage through the Miji territories gave him great prestige, for these tribes were much feared by the Mönbas (lowlanders), as the people of the Tawang neighbourhood are called, to distinguish them from the true Tibetans. This is evidently the same as Menba, which Mr. Dundas applies to the people he came in contact with on the confines of Tibet. The history of this political area since 1913 is encouraging. The Akas have shown great desire for further acquaintance with us. Schools and dispensaries are opened, and even the Daflas are reported to see the advantage of a settled form of government, and the numbers wishing to settle in the plains is increasing. The Political Officer was asked to settle some trans-frontier disputes among them in 1917. He reports that a certain old man, Sangya, is the firebrand, and adds: "Although a rascal, I like him; he has a sense of humour." Apparently the liking was mutual, for the old rascal made a special journey to visit the Political Officer. One section of this tribe has just been punished, for raiding into our territory, by a small column of seventy-five rifles, military police, which burnt the five villages concerned.

I have had occasion to refer frequently to the military police, and a few details regarding this force and its organization will not be out of place.

The Assam Military Police has a continuous history, going back to the Armed Civil Police, raised in the earliest days of our rule in the province. There have been several changes in personnel, and in the localities in which the battalions are stationed. At first all races were taken into the ranks, but for many years only Gurkhas from

Eastern Nepal and Jharuahs—the best fighting race in Assam and wonderful men in the jungle and at boating or rafting—have been enlisted. The force during the war has been used largely as a training corps for the regular army, some 6,000 men having been sent from its battalions to various Gurkha regiments, and they have done well in France, Gallipoli, Egypt, and Mesopotamia, adding to the already splendid records of their units.

Until 1917 the force was under the command of the Inspector-General of Police. As this officer had also charge of the civil police and was besides Inspector of Stamps, Stationery, Registration, and Jails, it is not to be wondered at that he found little time for inspecting his much-scattered military police. Further, being a civilian, he was at a considerable disadvantage when each of his commandants suggested a different scheme for improving the force. In 1917 the immediate command of the military police was placed in the hands of a senior officer lent for the purpose by the Commander-in-Chief and styled Deputy Inspector-General, Military Police, and Colonel L. W. Shakespear, C.B., of the 2nd K.E.O. Gurkha Rifles, and later A.Q.M.G. in Mesopotamia, was selected for the post. He had served five years as a Commandant of the Naga Hills Police and so knew what was needed. In recognition of the service done by the force during the war it has been given the name of Assam Rifles, and there are now four battalions located in the Lushai Hills, Sadiya, Naga Hills, and Manipur, and there is a possibility of a fifth being raised. Each battalion is 840 strong, and has a Commandant and two Assistant Commandants, who are lent by the army for periods of five and two years respectively. Unless some change has been made recently, there is no system by which the services of these officers while on deputation are brought to the notice of the Commander-in-Chief, which seems a pity, for there is rather a tendency in the Army to think that they loaf and learn nothing, which is the reverse of the fact, for there is lots to do and there are opportunities of learning much that does not come in the way of an officer with a regiment in cantonments. The pay is good and the work varied and interesting.

The force has recently been re-armed with 303 rifles and its equipment brought up to date. Its fighting efficiency is high and it is a very independent body, for it can house itself not only on service but even in permanent stations; it has made many miles of road and every battalion can produce many men who can handle boats and rafts expertly, a most important qualification in that country of big and rapid rivers. It has done good service in every one of the many little wars that have occurred since we occupied Assam, in which, if the fighting value of the enemy has not always been very high, the difficulties of the country and the climate have certainly been great, and, speaking from the experience of many years, I can truthfully say they have always been surmounted with cheerful courage.

The results of the exploration and political work achieved between 1911 and the outbreak of the war may be briefly summarized. Throughout the greater part of the frontier, from Rima to Tawang, a distance in an air line of about 300 miles, we have substituted for almost

complete ignorance of the country and people immediately adjoining our border a good working knowledge, and in many parts a very accurate knowledge of the country and its inhabitants right up to the summits of the Himalayan range; and, thanks to Captains Bailey and Morshead, the mystery of the Tsangpo has been cleared up. We have found that the Tibetans and their government are very well disposed towards us, and between us and Tibet we have proved that the tribes are not in the least formidable, though, as Mr. Dundas says, some of them are fierce and windy in talk. It seems to be clearly established that the political officers are well able to gradually extend their influence over these conceited gentry with the aid of the forces of the province, i.e., the military police; but, of course, the "wait and see" policy of the last century must not be reverted to.

DISCUSSION.

CAPTAIN C. SLACK: I would like to ask the Lecturer if he can tell us anything in reference to the railways which have been projected and referred to in some of the Indian reports, particularly the one from Sadiya to join a line coming up from Mandalay to Myitkyina. There was also the main line that was carried in the direction of Yunnan, but that was stopped, I think, half way. Is there any prospect of those lines being carried farther? Then there was another line that was carried down along the coast to Chittagong. Is that likely to be extended? because if it was available for use it would be most valuable to merchants and manufacturers. I assume from what the Lecturer said that our Indian border is co-terminous with the Chinese border.

LIEUT.-COLONEL SHAKESPEAR: I am afraid I have no inside knowledge of the intentions of the Government, except that I understand that at present the want of money and the possibility of requirements elsewhere is hanging up practically everything. I know that the railway down to Chittagong along the coast was seriously considered, but I believe the immense expense—cost of the bridges over the big rivers—stood in its way; at any rate as far as I know the Hukong Valley holds the field. But as to exactly what is being done, from all I hear it is purely a matter of what we call in India "paisa"—whether money can be found for it. I understand that we are actually in touch with China on the far side of Burma.

MR. W. A. COSGRAVE: I have returned so lately from Manipur, about which Colonel Shakespear has been lecturing, that it has been a great source of pleasure to listen to what the Lecturer has said this afternoon, as anything I have learned about frontier work in Assam I learned as an assistant under him, originally in Manipur. I know practically nothing about the Abor country, except that I have had the pleasure of meeting Mr. Williamson, Mr. Dundas and the other officers who worked there. I am afraid that I have nothing very much to say about the Kuki expedition. The Kuki operations with which the Lecturer has dealt were necessary probably owing to over-zeal in recruiting for a Labour Corps. All I can say is that like most of the English officers who have served in Manipur in the last two or three years I have great respect for the Kuki. In my opinion the Kuki is a fine vigorous person, and I think Colonel Hobson will say the same. Personally, I think he will do very well. I may say that just before I left Manipur last month I had a discussion with Colonel Leslie Shakespear, cousin of the Lecturer, and he

asked me for my advice as regards recruiting Kukis for the Assam Rifles. It will probably be a source of pleasure to most people to know that the people whom we have defeated in these recent operations are likely to come forward now and make very good men for the Military Police. As a matter of fact I think most of the British officers who have had to fight against the Kukis have a very great deal of respect for them. They are jungle people, and if they are handled properly they ought to do very well. The present idea in regard to recruiting for the Assam Rifles is that there shall be at least two or three platoons in each battalion recruited locally from among the people, so as to leave sufficient Ghurkas as a nucleus for the new 5th Battalion. I can only, in conclusion, express my pleasure at having had an opportunity of hearing Colonel Shakespear's lecture.

COLONEL T. C. HOBSON: It is twenty years ago since I dealt with the Kukis. I think I was one of the first British officers to deal with those particular people, who gave us a lot of trouble. They made their own powder; they converted Sniders or Martinis into muzzle-loaders; but their favourite weapon was the old pattern Tower musket, a converted weapon. For caps they used material that they obtained from Cachar, and to some extent the steps that Colonel Maxwell and I introduced, of stopping the supplies of caps at the fountain head were, at any rate for some time, successful. That policy if it had been pursued might have done more, but it depended upon districts outside Manipur, in areas not under our control. The Kukis are people who may perhaps be made into soldiery. For myself I am somewhat doubtful about it, but Mr. Cosgrave's knowledge on the subject is more recent than mine. With regard to the railway, the very first job I ever tackled as a young civilian in Assam was when I was charged in the Secretariat with the duty of the collation of the numerous Reports in connection with the various competing schemes for railway projects linking up the Assam system with the Burma system. The summing-up went in favour of the line *via* Sadiya and the Hukong Valley. It was the exploits of the "Emden," which cut Calcutta off from Burma, that brought the necessity for that railway once more into prominence. As Mr. Cosgrave mentioned to me to-day, proposals were made—I do not know whether they were actually carried out—for carrying the mails once more across the hills, through Manipur, into Burma during the "Emden" troubles. That part of the country is still one of the doors in the East, one of the halfway houses on the road to Mandalay. Mandalay is one of the jumping-off places towards China, and what events, political and economic, will throb into this Empire through that door, have yet to be seen. It is perfectly certain that the North-east Frontier is yet destined to be the scene of great political and economic occurrences.

COLONEL MAXWELL: It is many years now since I had anything to do with the Kukis, but I must say that my dealings with them were always very unsatisfactory. They seemed to be a sullen and morose people, but I have been told by a friend of mine, who has spoken this afternoon, that that was chiefly because one could not speak to them in their own language. He said that as soon as you get to understand the language of the people they become more friendly. I have found the same thing with other tribes in Assam. These people used to live in rather remote parts of the district, and they did little or nothing in the way of cultivation except to produce food for their own needs. They possess one great advantage over the other wild tribes, namely, that they always have a leader or a chief, and therefore if any of the tribes in any village committed an offence you always had an opportunity of calling upon the chief to account for their misdeeds.

I might mention one or two customs among the people which are rather peculiar. I remember a Kuki woman once being brought to the hospital with a broken leg. She brought with her her little child, about four years of age, and her husband accompanied her. The woman was in the hospital and the child strayed down to the tank belonging to the hospital, the father being with the child. Somehow or other the child fell into the pond, and although the father was within 3 feet of the pond, which was only 4 or 5 feet deep, he declined to do anything at all to rescue the child. We asked the reason and we were told that the Kukis were forbidden to rescue anybody who had fallen into a river or a pond, that it was better to let him drown, because if they tried to save him their fate would be the same afterwards. I remember that others of the Kukis were of a very savage disposition. On one occasion they attacked a Naga village and killed 300 people. They brought back with them 200 of the heads in wicker baskets made of bamboo. Some of the baskets contained two heads, others only one, and some of them probably contained three. But in the baskets with the heads there was very frequently a leg of pork. The pork and the heads were all mingled together. That was one custom of the people which I had brought to my notice. At one time they were thought to be very brave people, but that was chiefly, I think, because it was said that the Nagas, who were also a fighting class, were afraid of them, so that they never attacked their villages. One reason for that was that if they attacked a Kuki village they had to consider not only that they would have the Kukis in that particular village against them, but that they would also receive the enmity of the whole Kuki race. It was for that reason that the Nagas were always afraid of the Kukis, so that a Kuki could travel through these savage tribes without an escort, whereas no other tribe, or even a British subject, would be able to do so. I am talking of the good old days, before we took over the government of the Naga Hills. The lecture this afternoon has been a most interesting one to me. I have known all these tribes and I am afraid I have been on a good many expeditions against them, so that it has been a great pleasure to me to hear what the author has said about the improvements that have taken place in these tribes in Assam.

DR. MILLER MAGUIRE: As one of the audience who is not an expert in anything connected with Assam or the North-east Frontier, except that he occasionally reads something about them, I desire to express my high appreciation of this lecture. I know, and I expect the audience at large knows, very little about India except from what we read of it. This lecture opens up ground to us in the most interesting possible manner, which was practically unopened to us before, just as Colonel Shakespear and his friends have opened the country itself. The Lecturer has mentioned the names of several wild tribes whose names have, for the first time as far as I know, reached this part of the world.

THE CHAIRMAN: Before I move a vote of thanks to the Lecturer for his excellent paper, I should like to make a few remarks by way of summing up what has been said in the discussion. Captain Slack asked some questions about the railways. I notice that he has left the meeting, but there are probably others here who are also interested in the railway question, and who will therefore be interested in what I say. Unfortunately all these great railway schemes that have been simmering for a good many years must be put on the shelf for a time, because there are so many other big projects in hand which the Government of India feel are more urgent, and which will demand an immense outlay of money. I am therefore afraid that the linking up of Assam with China will take some time.

Then Captain Slack also asked whether we were actually in touch with the Chinese Frontier. Of course we are. We have been in touch with the Chinese Frontier for a good many years, and our relations are rather intimate on that border. There are frequent meetings of the Frontier officers on both sides. As regards the question of recruiting for the Assam Rifles, the intention is, I believe, to give up employing Ghurkas to the extent that they were formerly employed. We have a very large number of Ghurka battalions now—I think the number of Ghurka soldiers has been trebled since the war began—and it will be very difficult to maintain the supply. I am afraid in that respect Assam will have to be sacrificed, but I do not really deplore the fact, because I am quite sure, from what Colonel Shakespear and some of the other gentlemen who have taken part in the discussion have told us, that there is suitable material to be found in these hills. We all know that the Jharuahs are excellent fellows. The same thing has happened on the Burma Frontier, in connection with which officers of experience with the frontier tribes will tell you that there is excellent material available, such, for instance, as the Kachins, who of late years have come very much to the front, so that in future we shall have to depend more on the frontier tribes of Assam for recruiting the Rifles than we have done in the past. Mr. Cosgrave spoke very highly of the Kukis. It is a remarkable fact that you will find the same sort of appreciation on almost every frontier. Officers who are brought into intimate relations with the adjacent tribes have the highest appreciation of the men they raise, and train and command, and it is generally well deserved. Moreover, every tribe that is employed in our service in that way often becomes a very useful unit in our frontier policy. Colonel Maxwell has referred to some of the horrible habits of these people. He mentioned how they mix up pork with human heads when going to market. In view of that fact, I presume that no officer of the Assam Service ever eats bacon! I quite agree with what has been said regarding the inadequate recognition which the officers on our frontiers obtain at the end of the small campaigns that go on in these distant parts of the world. The fact is that no one knows anything about them and no one takes any interest in them, with the result that many officers, who have done splendid service on all our frontiers, retire from the Service without the recognition which they so fully deserve. I will now ask you to accord a very hearty vote of thanks to Colonel Shakespear for his very interesting lecture, and personally I should like to thank him for the information I have gained from listening to it.

The resolution of thanks was carried with acclamation.

LIEUT.-COLONEL J. SHAKESPEAR, in reply, said: Mr. Chairman, Ladies and Gentlemen. I thank you very much indeed for your kind vote of thanks. With regard to the enlistment of these native tribes, I have only one thing to say, namely, that the material is undoubtedly there and that it is of an excellent character, but the whole success of the undertaking will depend on who is entrusted with its management. It is no good sending up a fellow who has passed the Staff College, and who is an A.I. tactician, who knows the rules of his trade from end to end. He may be a "bloomin'" general or he may be anything, but if he does not take the fancy of the tribes he is a wash-out; he is no use. On the other hand, you may get a man who knows nothing of the fine art of soldiering, but who will be able to lick these men into shape. The other day, when they were recruiting Chins for the Labour Corps, they tried to get the men in the hills but they could get none. Then that great man, Frederick Carey, unfortunately recently deceased, thought of one of his assistants in the early days when there was fighting going on, and they sent for E. O. Fowler, who had battled with these Chins.

Directly Fowler appeared on the scene a lot of these fellows, whom he had well licked, turned up and said: "Sahib, are you going?" He said: "Yes, I'm going." They said: "All right, Sahib, we are going too," and within a month he had a thousand of them. When they were asked to carry on in France for another year, the only thing they said was: "Sahib, are you staying?" He said: "Yes, I'm staying." They said: "All right, Sahib, then we are staying too." It is all a matter of the men who are put in charge of the scheme. I think the Kukis, and almost all these tribes, will make soldiers if you get the right men to deal with them and treat them in the right way. You cannot expect the same sort of discipline from them. You will get discipline of another sort, and perhaps of equal or better value, than that of the ordinary Hindustani, but you must treat them in the right manner, and if that is done I am sure it will be a success.

The meeting then terminated.



MODERN PATRIOTISM.

By THE REV. FATHER BERNARD VAUGHAN, S.J.

On Wednesday, April 21st, 1920.

SIR R. H. BRADE, G.C.B., in the Chair.

THE CHAIRMAN: Ladies and Gentlemen. I have a very pleasant duty to perform, namely, to introduce to you Father Bernard Vaughan as the Lecturer this afternoon. You do not want a speech from me; you would probably resent it if I attempted to make one; but as far as Father Bernard Vaughan is concerned I know he will excuse me if I confine myself to the assurance that we are fully charged this afternoon with the truth of the adage that "good wine needs no bush."

LECTURE.¹

MR. CHAIRMAN, My Lords, Ladies and Gentlemen. It looks almost like an impertinence to select as the subject of my talk this afternoon, patriotism—patriotism in an institution bristling with tokens of it everywhere, and patriotism represented in its highest reach by you yourselves who are members of this Royal Institution. I have not come here to charge the battery with patriotism, but rather to try and persuade you to put it "on tap," in order that all—the man in the street and everyone who is a member of our great Empire—may be inspired by the same laudable sentiments of loyalty and patriotism which are the distinguishing features of this assembly.

I do not think there is enough cry of patriotism. There is a greater cry, a strong one, for money, money, money. From all sections of the community we hear the clamour for more money. People want money because they want pleasure. We are bent upon pleasures, and pleasures are ready-money business. And some want money because, unlike those belonging to this Institution, they cannot always get honours by merit—so money!

Ladies and Gentlemen. I think that at root there is patriotism in the country, but it wants awakening. I have seen some fine examples of patriotism and loyalty among the people. A working man, who had lost three sons, told me he was ready to drop his last penny and to shed his last drop of blood for his country. A curious little incident occurred to me the other day in the north, when I was visiting a well-to-do

¹ Lecture was taken down by shorthand, as the Lecturer had notes only.

family. I saw a pair of beautiful lady's white gloves under a glass case. "And what relic may these be?" I asked. The mother replied: "Those are the gloves I had on when her gracious Majesty shook hands with me, so I drew them off and have put them in that case, that my children and my children's children may know that the Queen and myself were personal relations!" Well, it was very nice. I think that everybody ought to be proud of our King and Queen, and prouder still of being their subjects. I was once asked in the States by one who was not altogether enchanted with the British Empire, what I should like to be if I were not an Englishman. "Well," I said, "if I were not an Englishman I should want to be one all the time." I think that is a definition of patriotism. I remember a young guardsman writing from the front, saying: "There is blood on the right of me and blood on the left of me, blood in front of me and blood behind me; I am standing with my feet in human blood, and shells are screaming and shrieking over me clamouring for my blood. Before the week is out I must either go under or out of my mind; but, no matter what it is, I am here doing my bit." That is patriotism.

I went to see a young widow who had lost her fine soldier husband. She was up every morning at six, and was at my Mass at eight. By nine she was at the railway station, and from then until nine in the evening she was there every day, looking after the wants of our boys in blue or khaki as they passed the station, serving them up something hot to help them on the road. That is patriotism.

Then take the case of that French village girl; her father and brother, who had been the bakers, gone to the war, and no bread for the village. She was only fourteen. She set to work doing the work her father and brother had done, and she lost her life over it. That was patriotism.

But I must give you, I suppose, an exacter definition of patriotism. Tommy Atkins's definition of patriotism is "Doing your bit," and it is a fine definition; for when that maxim is carried into practice we see how noble it is. My definition of patriotism is "the feeling which moves the individual to identify with his own the interests of the social group to which he belongs, and to speak and act accordingly." That is, I think, Dr. Munroe's definition in the *Encyclopædia*. The sociological derivation of patriotism is not disputed at all. All agree in ascribing its origin to the family life, that being the earliest form of social group. As you know, even among animals there is a closely defined brute instinct which leads the male to care for its mate and offspring, and which fills them with loyalty and affection. We have much to learn from the animals in this. So devoted are the mother elephants to their young, that the great difficulty in capturing them for the Zoo is the fact that you cannot separate the baby from the mother. I think, moreover, that if people want to learn a little about domestic life they might do worse than study the habits of the grouse and of the partridge.

So too, in the primitive life of man, the support, protection and authority invested in the father held the family together. If the family

was to survive unbroken there must be necessarily what we call fatherism. It is the primitive type of patriotism, seen especially in the clans of Scotland, and I have found it very much among the Redskins in America.

Soon groups of families joined together for mutual protection against wild beasts and the forces of nature. Families of common origin and with common interests, families on the plains and families on the mountains grouped together, and then they became bigger groups. Hence tribalism. Gradually tribes became nations, with a love of country, and that is what we call patriotism.

This patriotism of which I speak is rooted in the primitive instinct to struggle for existence. Life is struggle, and struggle is suffering, and it is a case of "suffer, or go under." Malthus, Darwin and Huxley have dealt a good deal with this subject. Huxley points out that the tendency of civilisation is not to promote the survival of the fittest, but to fit as many as possible for survival, and that is the Christian idea. So we have to be on our guard against Eugenists and faddists.

I said that patriotism is an instinct. Now it is characteristic of an instinct, as you all know, that it acts without reflection. The eye automatically closes when a speck of grit assails it; when you are tripped up, the hands are instinctively thrown out for self-protection. Sometimes this instinct is tried beyond endurance, as in a fire on a ship or in a house, and then, alas! we sometimes see men seeking their own self-protection, without regard to anyone else. But in rational beings, such as we are, instinct must be regulated by intelligence, the guide of all action and conduct. We have got to beware not to indulge in certain instincts. A man can "do himself" too well either in drink or in food. I remember a friend of mine, who was ordered by his doctor to give up port, with the exception that he might have only one glass a day. The ladies of the establishment were delighted to see that he was drinking no port but only hock. Presently, when they retired, he touched the bell and said to his butler: "Dorrington, bring me in a glass of port, and, as I am allowed only one glass, do not forget to bring in the celery glass!"

A friend of mine in America invited a mutual friend to lunch. It was a Friday and they had fish. They were brought a big and a little sole, and the host gave his friend the little sole and put the big one on his own plate. "Well," said his friend, "I guess that beats cockfighting. I am just tickled to death to think that you have taken the big one. You invite me to lunch, and you take the big sole yourself and give the little one to me; not that I mind, but I think it is something cruel. How do you explain it?" He replied: "Have I not done what you would have done?" "No," said his friend, "I would have given you the big one and taken the little one myself." My friend said: "That's just what I've done."

The instinct of patriotism, of which I speak, has to be regulated and disciplined, because it is exposed to two diseases. First of all there is the disease of militarism, as expressed in Hunland by the words

"Might, Kultur and Frightfulness." That is one danger we have to beware of. Then there is the other extreme. We have to beware of Pacifism. "Nothing can justify killing an enemy" is what pacifists say. I was very much found fault with because at the beginning of the war I continued to say, "Keep on killing Germans." By pacifists it was looked upon as a very wicked thing. "Well," I said, "either that, or keep on getting killed yourselves."

I think there is another enemy we have to beware of, the conscientious objector. I give the conscientious objector credit for honesty of conviction. I believe he thinks he is all right. But anyhow, whether he is honest or not, that does not give him a charter of liberty to act in opposition to the laws of the land where he lives. The conscientious objector has no right to avail himself of the privilege of citizenship in a State regulated by intelligent patriotism. He should go forth and colonise the Atlantic Ocean, or settle down in some desert island, or else stop at home and do his bit. We have been suffering from groups of this sort for the last five or six years, and I think these people need to be drilled in the ideas of true patriotism. It is our mission as Englishmen always and everywhere to try and make people feel and understand what true patriotism really is.

We English and British have no small reason for strong patriotism. Ours is not a bad little estate: about one quarter of the inhabited globe! You can hardly call ours "a contemptible little family," when it is nearly a quarter of the human race. We have an altogether wonderful Empire. Most parts of it are splendidly regulated and governed. But the greatness of our Empire is not to be estimated in terms of acres or of wealth, or even of population. The greatness of our Empire must stand or fall, not by what it *has* but by what it *is*—by the number of intelligent and patriotic, noble and honourable, lofty and religious subjects of which it can boast. As a federated community, as an organisation for fair play, as a fighting machine, this world has so far seen nothing to compare with the Empire of which you and I are the proud subjects.

The Hun was, of course, the acme of organisation, but, thank God, we were not organised like that. It is no good being organised out of your own wonderful character, out of your own God-given personality. You must stand upon your own feet and look out under your own hat, and be the man that God meant you to be and in the place where He wants you to be. Do not try to be something else, and do not be ruled and regulated as though you were a cog or a wheel in a piece of German war-machinery. Fortunately that machine has gone to pieces.

Before the Great War some might have questioned our right to our place in the sun. The war has revealed much; it has been to us a sort of Columbus. It has discovered for us an Empire, of which we knew little. Ladies and Gentlemen. What a glorious sight was the rallying to the old flag when the Hun dared to attempt to pull it down! What a splendid sight for our eyes it was, to see our boys in blue and our lads in khaki rallying in their millions, resolved, cost what it might, to uphold the flag and not allow it to be dragged down. From the golden

round of our Empire, like spokes of a wheel, our boys were knit to the hub of Empire. They leapt like a sword from its scabbard. Dropping their tools, they shouldered their guns, and all the world wondered. It was splendid.

Go back on those all but five years of war, with victory from day to day deferred, the men in the trenches knowing nothing as to how the pendulum of war was swinging. How they held on to their bit in mud and blood, sometimes on short rations; coming from the dug-outs and going back again; not knowing how long they had to live; wondering whether they were going to be smashed up; whether they were going to end their lives as raving lunatics. They knew that their one chance for victory was to stick it. That I call ideal patriotism.

Pause for a moment. It is good for us to pause and think what discipline, suffering and comradeship did for those rude, rough, uncouth lads in homespun who went to the front. Before the crisis they had no thought of fighting. They were from mills, from the land, from behind counters, and all sorts of places, which do not turn out soldiers as a rule. They have come back from the work of hell, gentle and kindly; and so courteous and grateful, that they have put to shame not a few of the officers of our new Army. In camp, hostel or infirmary I found them, without exception, nature's perfect gentlemen. It is wonderful what discipline, comradeship and suffering does for a man. One of the reasons why I deplore the Divorce Bill beyond measure is because it is undermining character; giving people the notion that they have no call to suffer, if they are not getting all they like; that they have nothing to learn from comradeship, nothing from the discipline of life. I think we are undermining, instead of underpinning, our great social fabric, the bricks and mortar of which are made up of the homes of the people.

I cannot refrain, while talking of the war, from mentioning the creator of munitions, Mr. Lloyd George; for I shall never forget, no matter what happens, what we owe to that Statesman. And what we owe to the inspirer of the new Army, Lord Kitchener of Khartoum. He raised no less than seventy divisions! We are delighted to read in his life how he ever obeyed the still small voice of conscience. In the stress of war it was patriotism that drew us so closely together. There was never an Empire so closely knit as we were when we were at war with the Hun.

Now that peace has come it should be our instinct and is our sacred duty to keep this close union. Last week the High Commissioner of Canada reminded us that the ideal of Empire is closer to those who live overseas than to those who live in the heart of the Empire. Certainly if you want to find enthusiasm for the Motherland I recommend you to go to Ottawa or Toronto. You will come back feeling that *we* are frozen in cold storage, while *they* are blazing like a furnace. We have much to learn from Canada, our eldest daughter of Empire. As all the nations making up our great commonwealth come from a common stock, speak a common language and use a common literature, we ought

all of us to be inspired by ideals in common, making for the well-being of the Empire, for freedom, justice and fair-play. These are the ideals that we should inculcate and persuade our children to assimilate in our schools. I look forward eagerly to the Imperial Press Conference, to be held this year in Ottawa, the capital of our premier overseas Dominion. I look forward to a Press in the near future which will refuse to be Americanised. I do not want my papers to live upon headlines and upon stuff that is not going to build up a fine constitution. Papers from our Press, like coins from our mint, ought to be impressed with a clearly defined British character. The Press is growing in power every day, because in proportion as people refuse to think their own thoughts they are fed and led by their daily papers. The responsibility of the Press is almost overwhelming. The news sheet at breakfast comes, like the morning sun, to give colour to all the events of the day. It is a great flash-light, showing up to the public and revealing to everyone the faults and failings and the shortcomings of our brothers and sisters. I am sorry to say that its endeavour does not seem to be to seek out our virtues but our vices. What kind of people are those who seek evil in one another, instead of seeking what is finest and paying back in the same coin? It is a sad thing to be finding fault every day. Man and woman are in nothing alike. Each gives to the other what the other has not, each partakes of the other, and the two together ought to make a perfect headship over the family—the family, the foundation stone of the Empire.

Again, next year there will be an Imperial Conference, when representatives of all our overseas Dominions will sit at a round table and discuss Imperial questions. True patriotism must convert this Imperial Conference into a real living energizing power. If our mammoth Metropolis, the greatest mother-city of the world, is to be truly the heart of our great Empire, let her not forget what is the function of the heart. The heart must be kept sound and strong, that it may pump the life blood throughout the whole body, and the life blood must freely flow through arteries and veins if it is to nourish every part of the organism. There is a great desideratum. How often does one hear from those who come from distant parts to this country, still more if you go to our far-flung Colonies, of the little interest that a Londoner takes in anything outside his own West-end. We ought to remember that those in the far-away parts of our Empire are our brothers and sisters. We should give them all the help we can; because living so far from the heart of the Empire, they need its warm sympathies. Let it be our mission to give this sympathy.

And now let me come down to the concrete and remind you what we may do for our Empire and how best we can serve her. To my thinking, the best way for each one of us to serve the Empire is to foster and build up true English character; to live a life inspired by principles high and noble, generous and chivalrous. We are an extraordinarily patient people; we are an extraordinarily tolerant people; and we are essentially lovers of justice and fair play. But let us remember

that God wants us to grow *character*. When we get to "the House of Many Mansions," we shall not be asked anything about our banking account; we shall not be catechised as to what we left behind, but the scrutiny will turn on what character we have to present at the bar of the House. Without character you cannot enter into that Mansion, where there is no "servant's bell," no "tradesmen's entrance," but only a door for "visitors" who come to stay. Here character is no prime necessity! If you are in Society you are a visiting card; if you are a politician you are a vote; if you are staying at a hotel you are a number; and if you are in a train you are a ticket! But before God it is only character that counts. I think there is no more splendid conviction for a man on earth to have than this: "The one thing I have to grow for God is character—that I may be able to stand and look Him in the face and say: I am a worthless servant, I have not done much, but I have brought you a character." Men of this stamp are Alfred the Great, Sir Thomas More, the Great Duke, and, let me add, Lord Kitchener. Sir George Arthur ascribes the influence he exercised to religion (religion is rather out of date and he is a bold man to say that), "which sanctified his life, ruled his conduct and raised him head and shoulders above his fellows as a leader." Listen to this little paragraph from that enchanting life:

"To those," he writes, "who lived near him, who never heard fall from his lips one impure or ignoble word, who could never detect in his mind the faintest ripple of an unworthy current, who witnessed day by day and hour by hour the selfless devotion to duty, the uncomplaining sacrifice of so much that so many men look upon as pleasant, it seemed as if a conflict between good and evil had been fought and decided in his soul at some early state of existence, as if in so many things that matter so much to the man of the world the Prince of this world might come to him, and find nothing. His life was based on religion in the primary sense of the word—the binding himself up with God and the Sacramental truths in which he had steeped himself in early youth must have instilled in him the reverence in which he held all sacred things." What can I say of him? I say of him what our poet said of the Great Duke:

"Foremost captain of his time,
And as the greatest only are,
In his simplicity sublime."

I would even use the words appropriated by Sir Galahad:

"My good sword carves the casques of men,
My stout lance thrusteth sure,
My strength is as the strength of ten,
Because my heart is pure."

A friend he was. All who were on his staff were ready to die for him. Ladies and Gentlemen. I remember his losing a friend, a brother officer, and in the carriage, on the way back from the funeral, he dropped

his head into his hands and sobbed like a mother at losing her only child. Kitchener was a great man. Our men of light and leading, Kitchener foremost among them, remind me of the vision of Ezekiel, of the creature with the wondrous four faces, the face of an ox, the face of a lion, the face of a man and the face of an angel. That symbolism sums up the character of Kitchener of Khartoum. He had the strength of an ox, and the bravery of a lion, he was gentle and courteous as a man of this earth, pure and sweet as an angel of heaven. What more can I say of him?

How are we to form our character? What is it that brings out character, which may be compared with the clearly defined impress that we see after the seal has been set on the molten wax? The great formers and engravers of character are heredity, environment and education. How we ought to impress this upon those coming after us, the young. Heredity, environment, education. We want acts begetting habits, and habits begetting conduct; so that conduct may beget character and character beget destiny. How are we to do this engraving and building up of character? I should like to pause to remind you that our present-day education, which leaves God out, is not going to build up character. In fact, there does not seem to be any general attempt to build up character. People seem to treat the child as though he were a parcel-post van, to be filled up with packets, which are chucked out at the next station. Whereas he should be like an observation car, with an outlook upon life to see where his mission is, and how he is to build up character, so as to carry out that mission, cost what it may. "Leaving God out!" we exclaim. They answer: "We do not say anything against God." "It would be almost better if you did; it would give us a shock." The Press never mentions God! The Cabinet never mentions God! The Great Four or the Great Five never seem to mention God! We seem to be trying to run our Empire, and not allowing God to interfere. If He had not interfered and come to our aid, do you think we should have had the victory? I do not. I think it is base ingratitude, to say the least of it, not to remember Him. It was shouted round our Empire; taken up in London, carried on to Paris, and to Rome, and to the United States—"Victory!" God helped us, not because we were so good; but because the Hun was so bad.

Ladies and Gentlemen. I am told so often, especially by the modern world, by the leading article in the Press, that what we need is further knowledge. They say that knowledge is going to make us a splendid people, noble, upright, straight, God-knowing, and with a non-stop flight from earth to heaven when the time comes. I do not think that knowledge in itself has any moral value. Knowledge is like health or wealth; it depends on how you are going to use it. If you put the weapon of knowledge into the hands of youth, unless you impose the controlling power of religion, you may be arming a mob instead of drilling an army. If you disagree with me, I ask you "Who are these Bolsheviks?" University students. "Who are those who want to undo England?" Not the unlettered, but those who have had education.

So I say "Sheathe the sword, till you know when to draw it and how to use it." "Life," said Matthew Arnold, "is three-quarters conduct." We are not paying much attention to conduct.

Ladies and Gentlemen. We must do all we can to promote Patriotism, to make our country worthy of its patriots and its patriots worthy of the country. I feel sad to think that so little is done to educate character and to teach conduct. I think that everywhere in our schools we ought in the first place to teach our children the history and geography of their Empire. They do not know either. The consequence is that the House of Lords knows all about Divorce, but it does not know much about the Empire. The House of Commons knows a little more, but not enough. They have not seen it. They have been down to the City in the morning and back in the afternoon. We should study our Empire and know it and be proud of it; and we should be proud of it if we knew it. We do not wave the flag enough in England. That is what I think. People tell me I am too English. I say I am not English enough. We ought all to be English and stand together by the grand old principles which made our forefathers so great. They had faith. Look at the cathedrals, minsters and abbeys, with which they girdled our country. Look at the thousands of interlacing churches and chapels which they erected. You say they were not wanted. They were not wanted for the congregations, that is true. There were only three millions in the whole of England when they were doing this; but the people wanted to raise monuments to God; to prove to Him what they thought of Him; and therefore only the best, and nothing else, was good enough for Him. England was then an object lesson to Christendom.

Ladies and Gentlemen. We want to build up men of faith. The highest faith expresses still the highest man; for we live and grow like the things our hearts believe; and rise or sink, as we aim high or low. No mirror shows such likeness of the face as the faith we live by of the mind and heart. We are in very truth that which we love, and love, like noblest deeds, is born of faith—faith in God, faith in Empire, faith in Country, faith in your King.

I was asked the other day what motto I would like to lift up in England. I said: "Over every lintel, over every bed-place, over the white walls of Dover, I would write up *Pro Deo, Pro Rege, Pro Patria*. "For God, for King, for Country." On our modern monuments we are leaving out God. The next thing will be to leave out King, and then the country will go to utter ruin. *Pro Deo*—"For God." Why, for God? Because you cannot run even this fifth-rate planet without God. *Pro Rege*—"For King." Why? Because you cannot run our Empire without a monarch. *Pro Patria*—"For Country." Why? Because you cannot run our country without patriots. I heard of a man, a V.C., whose back was broken by shrapnel, and his heart was so weak and bad that it was impossible to give him an anæsthetic. What did he do? He took his crucifix between his hands and he said to the three surgeons "Hack away." After awhile he shouted "You are giving me hell, but it is not as bad as crucifixion; I will bear my bit."

Pro Deo. A Rajah writes: "My last rupee and my last drop of blood I will give for my king." *Pro Rege.* A lad, who had lost his two legs and his left hand and was blinded, shouted, as he lifted his little English flag with his right hand, "I have shed all but this for my country; I have done my bit." *Pro Patria.*

Ladies and Gentlemen. Let us do our bit. If we do we shall be true to the motto: "For God, for King, for Country." We shall fulfil our mission.

DISCUSSION.

THE CHAIRMAN: Ladies and Gentlemen. The subject is now open for discussion. I asked the Secretary if ladies could speak, but he did not directly answer my question. He merely said "They never have." Perhaps I may express the hope that on this occasion the precedent may be set by a lady joining in the discussion, because, after all, patriotism more than most of the influences governing national effort may entail consequences in which the women of a country may be, and generally are, most vitally concerned.

DR. MILLER MAGUIRE: Ladies and Gentlemen. I venture, with much hesitation, to follow in the footsteps of the illustrious clergyman who has just done his duty by trying to raise, if possible, the tone of this brilliant assembly and the general ideas of the Institution to which we belong to the highest possible level. He began with God, then dealt with the King, and finally, referred to the country. I, as a humble individual, am not committed to preach righteousness and goodness to the extent that he is, and therefore I venture to reverse the order and to speak of patriotism first to King, then to Country, and finally to God. There is no portion of the reverend clergyman's address with which I am not in the fullest possible sympathy. I could not help admiring the manner in which all the cords of our existence were appealed to by the reverend gentleman. He wanted to know how it was that the family develops into the nation and the Empire. The reverend gentleman referred to Milton, when he said that everything we have is due to family life. Milton said:

"Hail! Mother Earth,
Sole source of human progeny,
Sole proprietor in Paradise,
Of all things."

I think that idea was in the mind of the reverend gentleman when he spoke about the source and the continuity of the human race. He also referred to instinct. I am very glad the reverend Lecturer said it is a great shame that the schoolmasters of England do not dwell continuously on the history and the geography of our Empire. As for patriotism, the definitions given by the learned clergyman were admirable, were lofty. They make us better regard the past; they make us work better in the present, and they make us better sow greatness, which is our duty to posterity. I know that the reverend Lecturer is very fond of the poets, and here again I pray in aid Sir Walter Scott. Sir Walter Scott, in "The Wars of Napoleon," sedulously talked patriotism to every creature in the British Empire. The reverend Lecturer—and in this case reverence has been speaking in the presence of the nobility, and reverence is equal to nobility—referred to reason and instinct. Here again poetry helps us. As Dryden says:

"Exalt your instinct as you can
Unless 'tis God's direct 'tis man's."

I do not like to talk cant, because I am not a very good boy and I never was, but an Empire without a God is, *prima facie*, a *reductio ad absurdum*.

Sir, the poetry of the Lecturer, the history of the Lecturer, the psychology of the Lecturer, the altruism of the Lecturer—all these good qualities of the Lecturer I could not dream of reproducing; I can only emphasise them. All my friends have worked for them; and I think, Sir Reginald, you will admit that I have done my little bit now, however feeble, in rising in this distinguished audience of patriots to emphasise the words of the reverend gentleman.

COMMANDER W. F. CABORNE, C.B.: Mr. Chairman, Ladies and Gentlemen. I am sure we are extremely indebted to Father Bernard Vaughan for the magnificent lecture he has given us this afternoon—a lecture which should certainly inspire us to do our utmost to follow out the patriotic precepts he has put before us. It is clearly the duty of every one of us, whether man or woman, to do his utmost to fight against Socialism, Syndicalism, Communism, Bolshevism, or any other ism, each succeeding ism invented being more damnable than the one that preceded it.

GENERAL LORKER: I do not think I have heard of any section of the nation which has better displayed the spirit of patriotism than our public schoolboys. They always sacrifice themselves for their country, owing to the training they received in their schools. I think self-sacrifice is at the root of patriotism, and that this nation will never attain to patriotism until it learns self-sacrifice. The reverend Lecturer has given us examples to-day of men and women who were prepared to sacrifice everything for the sake of their country. Self-sacrifice, in my opinion, must be the outcome, in part, of military training, which creates the spirit of discipline, and thereby we build up for the nation solidity for the future. The reverend Lecturer also spoke of education. It seems to me that education at the present day tends to selfishness. The individual is encouraged to do his best for himself and himself only, and until in all our schools—universities, public schools, board schools, and every other kind of school—the country is put first, the country will always suffer.

THE REV. FATHER BERNARD VAUGHAN, in reply, said: Ladies and Gentlemen. I do not think I have anything to reply to except to express my thanks to you for your kindness and appreciation of my efforts to put before you my ideas of patriotism. Of course, one might develop the subject on stronger lines, but I took into consideration the audience that I had before me. I think the speaker ought always to study the ground on which he is going to sow his seed, and not sow any kind of seed. I felt that what I had to sow on the soil of your hearts was that which I have given you. I feel that I have done my duty as far as I could and I am deeply indebted to you for your kind appreciation of it. I can only express my thanks to each and all of you, and all my thanks to each.

THE CHAIRMAN: Ladies and Gentlemen. It is now my duty, under Rule 8, to give my own views on the discussion. That is an easy job, because there has not been a general discussion on the subject of the lecture. Father Bernard Vaughan has, if I may say so, covered the whole of the ground, and I do not think that I can usefully add anything to the remarks he has made. He has given us much food for reflection, and if I say anything at all to-day it is merely to suggest an additional subject for occasional thought. It is this: We are still left with the problem which is almost eternal, and that is that patriotism involves hate—that

is hate of the other fellow—otherwise patriotism is likely to be ineffective. This is inevitable. The difficulty for the moralist is to determine at what point patriotism is to stop short of unreasonable hate—mere hate, that is. No one can hope to arrive at a solution of this problem by a mere generalisation. There it is; it is a subject for thought. All I can say is that it seems to me that each case must be settled on its merits. At any rate, this can be said, as I think Father Bernard Vaughan indicated in his lecture, as far as the British are concerned their hatred has never lasted beyond its due occasion, which is a great thing to be able to say. I have nothing more to say on the subject. As regards the proceedings of this afternoon, I have to tender to you, Father Bernard, the very sincere thanks of the Royal United Service Institution and of this audience for your extremely interesting lecture, and to congratulate you upon the maintenance of that high standard of oratory for which you have been known throughout London and the world for so long.

MAJOR-GENERAL E. T. DICKSON : Ladies and Gentlemen. Before we separate I should like to propose a hearty vote of thanks to our chairman, Sir Reginald Brade, for presiding over the meeting this afternoon. Before he went away for a holiday those who are his personal friends were very anxious about his health, and I am sure that everybody here is more than delighted to see him back from his trip abroad looking so well.

FATHER BERNARD VAUGHAN : I beg to second the vote of thanks to the chairman. I saw him before he went away, and I am glad to see that he has come back having renewed his youth, like that eagle I have read of but only now have seen.

The resolution of thanks was carried by acclamation.

THE CHAIRMAN : Thank you very much.

The meeting then terminated.



LORD COLLINGWOOD (1748-1810).

"I have always found that kind language and strong ships have a very powerful effect."—Collingwood.

By LIEUTENANT JOHN L. BEDALE, R.N.

(Awarded the Admiralty Naval History Prize for 1919.)

THE FIRST THIRTY YEARS.

LATE in life Collingwood expressed the conviction that "the temper and disposition of most people are formed before they are seven years old; and the common cause of bad ones is the too great indulgence and mistaken fondness which the affection of a parent finds it difficult to veil." The inference that early environment, in his opinion, accounts for much which is commonly, if loosely, termed heredity would lead us, therefore, to attach more importance to the upbringing he received as the son of a bankrupt ship chandler than to the Plantagenet blood transmitted to him by distinguished Northumbrian ancestors. Yet, if his father's poverty fostered the reserve and doggedness which characterized him throughout life, there must surely have been generations of fighting blood in the man who made the "Royal Sovereign" the admiration of the fleet at Trafalgar.

Of his childhood we know nothing, but his mother had considerable naval interest, and for a boy so situated the navy until recent years has always presented an opening. With the smallest assistance from embarrassed parents, it provided the certainty of an honourable livelihood with a chance of restoring family fortune. Cuthbert Collingwood accordingly left home in 1761 to spend forty-four of his future fifty years of life at sea.

The fascination of biography lies in tracing the interplay of character and circumstances, and we should notice his attitude to his calling. By application he became a master of his profession, but neither in youth nor afterwards did he display any liking for the sea. It was a question of duty. He had witnessed the hard struggle in the modest home at Newcastle, and though the life was not of his own choosing, he conscientiously set about fitting himself for his work.

During the long spells in harbour occasioned by Grenville's economy and the stagnation of the times after the Peace of Paris, he must have steadily built up that sound and general education which all his life marked him off from so many of his brother officers.

It is true that, knowing now that he was thirteen and not eleven when he left home,¹ rather more importance may be attached to the excellent grounding he received from a distinguished teacher at the Newcastle Grammar School, but the curriculum there followed the classical tradition while Collingwood was—as then understood—a philanthropist. He believed in mathematics, science, modern languages, and history as the true basis for education, and his proficiency in these subjects can only be attributed to his own diligence.

For all his industry, there was something almost lethargic about Collingwood; as he expressed it himself, "I am constructed of heavy materials which sink if they be not moved." He needed some external stimulus to set his full powers in motion. He schooled himself to meet emergencies should they be forced upon him, but he did not share the delight buoyant natures take in seeking difficulties for the sake of overcoming them. The danger of being passed over by more eager but less qualified competitors was, fortunately, baulked by his relatives and friends. Their influence placed him in positions where advancement might be looked for, so that, at the first sign of war, he found himself on the quarter-deck of Vice-Admiral Samuel Graves' flagship bound for America.

The expedition was, perhaps, the most ungracious mission that ever fell to a naval officer. Vaguely instructed to enforce the Boston Port Bill, the means supplied were so inadequate that coercion was impossible, and the utmost efforts could only irritate. Both the factors on which Collingwood afterwards learnt to rely for success were disregarded. Even kind language, backed by overwhelming force, might not have achieved anything, and certainly nothing could have been more impolitic than to attempt to punish the town by closing the harbour with ships which, far from being strong, were inefficient, too few and of the wrong type. Graves was soon recalled, but not before Collingwood, at the desperate Battle of Bunker's Hill, had won his long awaited promotion to lieutenant. It is possible that the experience he carried home with him moved him to increase, on his own initiative, the force allotted by the Admiralty to Duckworth's expedition to Constantinople in 1807, and, perhaps, influenced all his political dealings as Commander-in-Chief in the Mediterranean.

Shortly afterwards he went as first lieutenant of a sloop to the West Indies, where some difference with his captain led to a court-martial. Collingwood was acquitted, but the court admonished him for "his want of cheerfulness in carrying on the duty of the sloop, and recommended it to him to conduct himself for the future with that alacrity which is so essentially necessary for carrying on His Majesty's Service."¹ The cause of his apparent sulkiness, if we may judge by his not concealing what he thought of St. Vincent's unworthy services off Cadiz, was probably some disappointment, for that emotion he never learnt fully to control. At intervals, in his polished and charming correspondence, we find outbreaks of surprising violence, and they are invariably wrung from him by some

¹ Dictionary of National Biography.

bitter disappointment. His lamentation to Ball after the Nile from the "Excellent, still off Cadiz," is the well-known example. It was the same when St. Vincent and Keith between them missed the French fleet in 1799, while, when Sir Roger Curtis passed over his name for the gold medal for the "First of June," his indignation altogether boiled over. Howe's flag captain was an "artful, sneaking creature whose fawning, insinuating manner creeps into the confidence of whoever he attacks, and whose rapacity would grasp all honours and all profits which come within his view."¹ It is only fair to remember that several captains failed to do their duty on that occasion, and that there was a certain stigma attached to not receiving the medal, which gave an added sting to an unjustly withheld reward. Collingwood felt so strongly on the matter that after his brilliant conduct on Valentine's Day three years later, he told Jervis he would have both medals or none. He was presented with both.

Although he allowed full play to his feelings in his private letters he was more guarded for the future upon service, and to this extent the court-martial may have benefited him. The affair, in any case, did not affect him adversely, for a few weeks later he received the first step in a series of promotions which, within three years, advanced him to the definitive rank of post captain. On each occasion he succeeded Nelson, following him through four ships, and from that time until Trafalgar his career is so much associated with Nelson's that comparison is inevitable.

NELSON AND COLLINGWOOD.

"Simple love of greatness and of good,
That knits brave minds and manners more than blood."—Ben Jonson.

"Since the year 1773," Collingwood wrote after Nelson's death, "we have been on terms of the greatest intimacy. Chance has thrown us very much together in service, and on many occasions we have acted in concert—there is scarce a naval subject that has not been the subject of our discussion, so that all his opinions were familiar to me." Our memory of that friendship is now so coloured by the events of later years, when Collingwood's steadfast qualities appear but as a foil to Nelson's brilliance, that it is not easy to picture the two as they first met. In 1773 Nelson was only fifteen years old; Collingwood was twenty-five. To all appearance there was little in common between the elderly midshipman of the Portsmouth guardship, who believed in "leaving blockheads to enjoy their own nonsense," and the impulsive young urchin who had just returned from the West Indies with all the peculiarities and prejudices of a merchant sailor. Nevertheless, each quickly seized on what was best in the other and founded a friendship which shone undimmed, even by a passing cloud, until their lives' end. The benefit Collingwood derived from that association has often been insisted on, but it is too readily

¹ Clark Russell's "Collingwood," pp. 84 and 43.

forgotten how his broader mental outlook, his self-restraint and quiet humour may have supplied Nelson with some much needed ballast.

Many years service together in the West Indies conspired to maintain this fruitful intimacy during the time each was developing the qualities which were to make him famous during our struggle with revolutionary France. With a common patron in the Commander-in-Chief, their promotion was assured by the climate. Nelson himself nearly lost his life in the particularly pestilential San Juan expedition. Collingwood, as usual, succeeded him, and, though his own hardy constitution resisted many attacks, he buried in four months 180 of the 200 men in his ship's company. If Nelson in that enterprise already showed much of the vigour and initiative we associate with his name, Collingwood's endurance and tenacity are no less apparent. He unflinchingly awaited his recall, although towards the end he must have been faced with the prospect of being left to die alone, for many of the transports rotted and sank in the harbour from not having a living soul left on board.

Equally characteristic were their attitudes to the illegal traffic they found to have grown up between the islands and the mainland when they returned to the station in command of frigates, after the restoration of peace. Hughes, the Commander-in-Chief, was anxious to shut his eyes to what was going on, and a letter from Collingwood couched in kind language produced no results. He then conferred with Nelson, and together they metaphorically boarded the admiral armed with the Act of Navigation, which that easy-going old gentleman had never seen before in his life. Under their combined onslaught he gave way, and ordered them to seize ships trading illegally. The colonists, however, soon persuaded him to modify his decision. Nelson then proceeded to disobey his commander-in-chief, but Collingwood refused to follow this very questionable defiance. He was not of Nelson's fanatical temper. On Valentine's Day he awaited Jervis' signal before following the "Captain's" independent and desperate manœuvre, though when he received permission to do so he particularly distinguished himself by his judgment and his "most awful and tremendous fire." His courage has never been called in question, but such uncompromising self-assurance as Nelson's he evidently regarded with suspicion.

After the West Indies came the inevitable period of half-pay. This was the happiest period of Collingwood's life. Enjoying the society of congenial friends, indulging his love of reading, studying science, tending his garden, and planting oaks,¹ he passed his days in the greatest content. Nelson chafed against his enforced idleness. The arts of peace meant little to him, and for study he had insufficient application. His latent genius was fretting for an opportunity to express itself in action, and his wife, unfortunately, seems never really to have held his heart. Collingwood, on the other hand, married, in 1790, a lady to whom he remained most constantly devoted.

¹ From his anxiety for the supply of timber for the Navy; he had seen enough of foreign oak under Sandwich.

Not for long was he to enjoy the comforts of his new home. The great movement in France grew more and more violent and aggressive, and eventually led to war. Collingwood, like Nelson, hated the French, and with better reason. Nelson they provided with those opportunities for distinction for which he longed, but Collingwood they kept sixteen out of the remaining seventeen years of his life away from the home he valued more highly than reputation. At first he joined the Channel Fleet as flag captain to Rear-Admiral Bowyer, and was chiefly responsible for the honourable part played by the "Barfleur" on the first of June, but the following summer took the "Excellent" to the Mediterranean, where the "Agamemnon" had already made Nelson's name famous. Shortly afterwards Jervis took command of the fleet, "to the great joy of some and the sorrow of others."

Under Jervis in the Mediterranean.—In Collingwood and Nelson that masterly and domineering seaman found two of his best lieutenants. They were foremost in winning the victory which earned him his title; the splendour of Nelson's victory at the Nile reflected back upon himself, and in the presence of mutiny he could hold up the "Excellent" as a model for the fleet. Captain Nelson, already reaching towards higher things, was constantly employed on independent service, and St. Vincent treated him almost as an equal, but Collingwood's relations with the Commander-in-Chief were less cordial. Their temperaments were antipathetic. Now and afterwards they justly recognised each other's ability, but their intercourse was cold and formal, and, at least in his private correspondence, Collingwood did not conceal his dislike. He could not understand a man who would not serve because his party was not in power, and his conservative soul was slow to appreciate the need for some of the innovations introduced by the inflexible old Whig. Because Jervis thought it advisable to air bedding occasionally and eliminate the intolerable stench caused by keeping pigs on board, he complained that the fleet was run on a "blanket and pig-sty" system. Later, he came to recognise the benefit of many of these reforms, and followed them himself, but we know he had his pigs back from a quaint hexameter written just after Trafalgar: "My wine broke in moving and my pigs were slain in battle."

Being so much on detached service, Nelson enjoyed the fruits of the great admiral's strategy without suffering to the same extent as Collingwood from the severities of his discipline. During the tedious blockade of Cadiz there was much discontent in the fleet, and Collingwood shared the general resentment against the hardships imposed by the admiral. St. Vincent had good reason for most of his restrictions, but he certainly did nothing to soften their rigour. In pursuance, apparently, of a theory that the true basis of discipline is that all should see that everyone suffers equally, and at other times simply to amuse himself, he periodically inflicted deliberate trials of temper on his officers. On one occasion Collingwood was the victim; for although the story of the two bags of onions and Collingwood's

outbreak on the poop of the "Ville-de-Paris" has been doubted, it illustrates only too well a failing of both men most likely to show up during the monotony and irritation of an incessant blockade. Collingwood confessed to his daughter, "I am quick and hasty in my temper, my sensibility is touched sometimes with a trifle, and my expression of it is sudden as gunpowder,"¹ while the anecdote is in perfect accord with a number of others we have of St. Vincent. The incident was evidently an example of his idea of humour, for, in reply, he merely asked Collingwood to dinner. Such jokes, however, are rather one-sided, and it is not surprising Collingwood insisted on returning to his ship. Those who are over-anxious to eliminate half-tones from their mental picture of Jervis should look at the portraits we have of him: it is of no avail to dismiss such tales as untrustworthy unless we are prepared to coat those canvases with lamp-black.

The domestic squabbles of Jervis's fleet form a great contrast to the relations of Nelson, Collingwood, and their subordinates during their watch off the same port just before Trafalgar; and the lack of sympathy between Collingwood and his chief only heightens the value of St. Vincent's saying when dealing with refractory characters: "Send them to Collingwood—he will bring them to order."

Collingwood's reputation as a captain, despite his hatred of flogging, may not appear remarkable to-day, but it was evidently so regarded at the time. Apart from the insidious propaganda which had to be combated, the iniquities of the manning systems pressed such desperate characters into the service that the most brutal punishments were considered essential to the maintenance of discipline. Collingwood thought otherwise. He knew how to make a man look ridiculous, and found it more effective than to make him a centre of sympathy and indignation by bullying. Some of the punishments he devised to this end survive. He introduced system into everything, and, although not required at the time, kept a record of any floggings he was compelled to inflict. Besides sentences of six and twelve lashes, the list shows such numbers as seven, eight, and eleven, and this scrupulous care in assessing each sentence helps us to see Collingwood in the round. The root of the trouble, he realized, clearly enough lay in the type of men impressed—he complained once that he had some of all the states of Germany in his ship's company—and when he became Commander-in-Chief initiated a long-needed reform by persuading the Government to send him yearly 5,000 boys, who soon became the best topmen in the fleet. Idleness he chiefly dreaded; the mischief which Nelson knew might be brewed over a Sunday's grog. "My wits are at work," he wrote, "to keep my people employed both for health's sake, and to save them from mischief. We have lately been making musical instruments, and have now a very good band.² Every moonlight night the sailors dance; and

¹ Coll. Corr., Vol. II., p. 317.

² We may be pardoned the conclusion that he was not afflicted with an over-sensitive ear. Nelson was nearly tone-deaf. At Vienna he slipped out to a gambling table instead of listening to Haydn, who had come to play in his honour.

there seems as much mirth and festivity as if we were in Wapping itself. One night the rats destroyed the bagpipes we had made by eating up the bellows: but they suffer for it, for, in revenge, we have made traps of all constructions, and have declared a war of extermination against them." By such means, and by constant supervision and personal attention to everything, he gained his reputation as a trainer, and made his ship strong for the day of battle. Conscientious care alone could not have achieved such success; much must have been due to his personality and the integrity of his own character.

After taking such pains, it is easy to understand his mortification at not being sent with Nelson to the Nile. Chagrin got the better of his judgment, and oblivious of a previous letter explaining that the "Excellent" was worn out and expected to go home, he attributed the decision to St. Vincent's caprice. In his normal mood he might have reflected that the "Excellent's" condition apart, Jervis, well knowing the discontent to be expected in the ships newly joined from England, probably had a better reason for keeping his most trusted disciplinarian with himself.

The keenness of Collingwood's disappointment only shows the intensity of destructive purpose which possessed him when there was a chance of getting alongside the French. It is voiced in his sonorous phrase: "There shall not be a shadow of one of them left upon the face of the water," and it must have been one of the strongest bonds between himself and Nelson. The honours, too, attending a successful battle were a powerful motive with both. Collingwood's "I will be a Viscount or nothing" is a striking echo of the famous gasconade reported of Nelson: and what Collingwood penned in his cabin we can readily believe Nelson to have shouted as he scrambled into the main chains of the "San José."

Nelson did not rejoin the fleet after the Nile, and towards the end of the year Collingwood took the "Excellent" home, was promoted to rear-admiral, and joined the Channel Fleet. There he remained, except when the Peace of Amiens gave him his last year of comfort at home, until detached to win renown in the Trafalgar campaign. His services during that time may be summed up in Cornwallis's words: "Here comes Collingwood, the last to leave me and the first to rejoin me."

During those years of weary battling against wind and sea, Nelson, who had weathered all physical storms, went down before the moral tempest which had long threatened to overwhelm him, and although on his return to England he was acclaimed by the populace, he was coldly received at court and among his equals. To cover the tragedy of his private life he gave way, save where war was concerned, to that pitiable posing and acting which disfigures his later years. He must at times have been a somewhat embarrassing friend, but Collingwood's loyalty never faltered. On the few occasions they met during this period we feel that Nelson turned to him for something he could find nowhere else. With Collingwood the mask was dropped. He even proposed to go and live with him in his ship, but though this never came about, a picture we have of the two together, one short

peaceful evening at Plymouth, lingers in the memory with a haunting sadness.

Nelson had just parted finally from his wife, "calling God to witness that there was nothing in her conduct he wished otherwise," and deprived of happiness himself he sought comfort by promoting it in others. By his exertions he enabled Collingwood to join his family for a few hours. "How surprized," Collingwood wrote, "you would have been to have popped into the Fountain Inn and seen Lord Nelson, my wife and myself sitting by the fireside cosing and little Sarah teaching Phyllis her dog to dance. No greater happiness is human nature capable of than was mine that evening, but at dawn we parted and I went to sea."¹ How different is this from the tawdriness of Merton, which, at Blackwood's call, Nelson also left in the first grey of morning—a call which brought the old comrades together for the last time and led to the battle which was the apotheosis of their lifelong friendship.

The Trafalgar Campaign.—At the beginning of 1805, after nearly two years of passive defence, the rising spirit of the nation had entrusted Pitt with the task of wresting the initiative from Napoleon by arousing Europe to a joint attack on the common oppressor, and during the spring and summer the building up of that alliance went steadily forward, despite Napoleon's efforts to draw off our fleets and to pin our army to a tame defensive. The strain on our naval resources was enormous. In traditional manner we guaranteed transport whenever and wherever required—a pledge we were called on to redeem at the crisis of the campaign—and Craig's army, without which the suspicious Austrians and Russians refused to move, had to be conveyed to Italy just when Villeneuve was at large, no one knew where, and Nelson had reluctantly abandoned the Mediterranean in search of him. Nevertheless, the expedition was successfully forwarded, Napoleon's squadrons out-maneuvred or destroyed, and the alliances concluded. Nelson's part in that achievement is well known; Collingwood's was equally important.

As early as March 2nd Cornwallis had been ordered to form a flying, or, as we should call it, an emergency squadron under Collingwood. During the spring, whenever the latest intelligence was disconcerting, orders were issued to Collingwood to proceed to the threatened point, the force assigned to him varying with the requirements of the moment, but he never actually left until the middle of May. At that time false news was received that Villeneuve had returned to Cadiz; Nelson's position was unknown, and the Czar was complaining of the delay in the arrival of Craig. If our offensive plan was not to collapse, Craig's force must be secured and hurried to its destination; Collingwood must go in force to secure the command of the Mediterranean, even at the cost of weakening our hold on the Channel. At the last moment Missiessy's unexpected return to Rochefort from the West Indies caused Collingwood's force to be

¹ Coll. Corr., Vol. I., pp. 114 and 112.

reduced, but on May 23rd he left Ushant with nine ships of the line to clear up the situation. On his passage south he met Bickerton, who was coming from Gibraltar in accordance with previous Admiralty orders. From him Collingwood learnt that Nelson had gone to the West Indies in search of Villeneuve, and the important news, unknown at home, that both at Cadiz and at Cartagena there were active squadrons, which placed Craig's force in Gibraltar Bay in the gravest jeopardy. Collingwood's orders stated that if Nelson was in pursuit of Villeneuve he was to forward him sufficient ships to make him equal to his quarry, and send the remainder back to Plymouth. Collingwood decided to disregard them and proceed with his whole force to Cadiz. His action saved our army and the prospects of the coalition for which Pitt was working so hard. The Admiralty approved; Bickerton was sent back to him, and, with part of Collingwood's force, escorted Craig to Malta, while Collingwood maintained the Andalusian blockade himself with the remainder. There he was when Nelson arrived back from the West Indies; there he alone was left to cover our little expedition to Italy which was to raise half Europe against Napoleon, when Villeneuve's appearance sent Nelson and all the other squadrons streaming in to join Cornwallis off Ushant; and there too he was on the alert when, a month later, the combined fleet, out-maneuvred and dispirited, appeared off the port. He eluded his pursuers by a masterly retreat towards the straits, and next day with calm effrontery returned, looked into the harbour where the enemy's fleet "lay as thick as a wood," and resumed his watch, "hoping somebody would come to him soon." His courage was rewarded. Calder and Bickerton soon joined, making his force "enough whenever they choose to try their skill." On September 29th Nelson arrived from England and took over the command, just as Napoleon had learnt of our intended landing with the Russians at Naples, and in his anxiety to forestall it, had issued orders which spurred Villeneuve to his doom.

The political effect of sending our little army to Italy was immense, but the expedition also had a far-reaching effect on the purely naval side of that complex campaign. All unwittingly it was a contributory cause to the defeat of Napoleon's combinations. Both Nelson and Collingwood had their plans upset by the imperative necessity for ensuring its safety. Nelson was compelled to weaken the squadron he took to the West Indies, and Collingwood, in the face of explicit orders, was prevented from reinforcing him.¹ Craig's transports were the counter-magnet to the wealth of Jamaica, and kept many ships in Europe which Villeneuve would otherwise have drawn to the West Indies.

On Nelson the emergency imposed a severe sacrifice, but Collingwood having already divined Napoleon's intentions, more readily resigned himself to the necessary change in his plans. Whether his strategic insight was or was not greater than Nelson's, it is certain that at this period he predicted events with greater accuracy. Nelson,

¹ On second thoughts, fearing Cochrane might have followed Missiessy, he sent Nelson after all two of his fastest ships. But they were only sent on the supposition that a greater number were coming to Europe.

on his return from the West Indies, wrote to Collingwood, saying he judged the enemy were bound for the Mediterranean, but Collingwood's reply shows how nearly he had penetrated Napoleon's plan. "The flight to the West Indies was to take off the Naval Force, which is the great impediment to their undertaking. The Rochefort Squadron's return confirmed me. I think they will now collect their force at Ferrol, pick up those at Rochefort which will make them above thirty sail; and then without going near Ushant, or the Channel Fleet, proceed to Ireland. Detachments must go from the Channel Fleet to succour Ireland, when the Brest Fleet—twenty-one, I believe, of them, will sail either to another part of Ireland or up the Channel."¹ When the enemy, defeated in that enterprise, retreated to Cadiz, Nelson expected them if they came out to sail with an easterly wind, but Collingwood, by writing that if so they were not bound for the Mediterranean, deftly drew his chief's attention to the likelihood of their trying to get into that sea.² Next day the "Royal Sovereign" arrived and brought a copy of Craig's instructions to co-operate with the Russians in Italy, which convinced Nelson that he had been mistaken. Thenceforward he adopted Collingwood's view. Finally, on the 18th October, at the very moment Villeneuve was ordering his fleet to weigh, Collingwood wrote to Nelson: "It is very extraordinary the people in Cadiz do not make some movement. If they allow the war to begin in Italy they cannot hereafter make up for the want of assistance they might give in the first instance."³ This power of penetration and foresight was highly developed throughout the Navy at that time, and an attempt to analyse the quality will be made when we consider Collingwood as a diplomatist, for his ability stands out from his brilliant contemporaries in nothing so considerably as in this.

It was because Collingwood had rightly interpreted the meaning of Napoleon's moves that he was able to make the shrewd guess that no adequate provision had been made for the unexpected arrival of Villeneuve's fleet at Cadiz. He blockaded the coast on this surmise in the hope of forcing the enemy to accept battle before winter. The blockade was embarrassing to the Government, for it meant difficulties with neutrals. Collingwood's circumspection in representing the need for such steps was not Nelson's way: his habit where our policy seemed to him to embarrass the fleet was to deliver an ultimatum to the political officer concerned. Our ministers and ambassadors must frequently have wished him at the devil. As soon as he learnt what Collingwood had been doing he wrote to Castlereagh: "I have followed so good an example," and requested "that if it is thought proper to allow the enemy's fleet to be virtualled I may be informed as soon as possible."⁴ In the same manner he dealt with the question of water at Lagos. The unfortunate Portuguese had been terrified by Napoleon into refusing water to our ships, though ready enough

¹ Nicolas, Vol. VI., p. 477.

² Nicolas, Vol. VII., p. 81n.

³ Coll. Corr., Vol. I., p. 306.

⁴ Ibid., Vol. VII., p. 62.

to supply us so long as the French and Spanish consuls did not complain. On this occasion Lord Strangford, our ambassador at Lisbon, had to withstand Nelson's diplomatic broadside. "As to water, I never heard before that any limited quantity was allowed much less that if a dirty shirt was washed any French or Spanish consul should be allowed to say: 'You English shall either wear a dirty shirt or go without water to drink.' I shall send a ship or ships to take in water at Lagos, they shall wash or let it run overboard if they please, and if they do not permit it, I shall certainly retaliate." After which he naïvely concludes: "I should get warm was I to go farther."¹ The question recurred in Collingwood's time, the Portuguese hinting that we could obtain what we required under cover of darkness. Collingwood wrote: "If Portugal be unhappily in such a situation that she must veil her friendship—her misfortune is to be deplored; but I never will allow the dignity of the British Flag to be questioned by the ships engaging in an intercourse that will not bear to be looked on by the whole world."² The quiet dignity of this letter is no less effective than Nelson's indignation.

The temperance of Collingwood's character probably made him more effective in the long run in political affairs than Nelson, but it was perhaps a necessary corollary that it should prevent him from directing the fleet with Nelson's originality or fiery enthusiasm. He followed the close blockade instituted by St. Vincent with an inshore squadron of the fastest sailing seventy-fours, he practised his fleet constantly at the guns, and was at pains to secure fresh provisions to maintain the health of the crews,² watched the enemy "narrowly, and if they come out will fight them merrily," but there appears to have been some truth in Codrington's stricture that he lost "all the outline of the chief command in his attention to minutiae": Nelson's confident mastery he certainly lacked.

Nelson, while he shared with Collingwood "the patient courage which waits for the opportunity it cannot create," was determined to leave nothing undone to make for himself the opportunity he desired. As soon as he arrived he recalled the inshore squadron and withdrew the whole battle fleet out of sight of land, leaving only cruisers to watch the port and maintain the coastal blockade. Observation was always more attractive to him than blockade, and by concealing his position and strength from the enemy he hoped to entice them out, but if this would not do, intended to press all the latest inventions into service and make an attack on them at anchor. Before leaving England he had arranged to be supplied with fireships, explosive rockets, and Fulton's torpedoes. Collingwood detested such instruments, and it is doubtful if he would have had much share in their use had it proved necessary to employ them, and it will be more profitable to compare a few aspects of the famous tactics Nelson proposed to employ in the open sea, and put, in the main, into execution, with the battle orders Collingwood issued in 1808.

¹ Nicolas, Vol. VII., p. 68.

² Coll. Corr., Vol. I., p. 306.

Trafalgar Tactics and Collingwood's General Order.—The occasion of Collingwood's general order¹ was Ganteaume's expedition from Toulon to supply the French garrison at Corfu. The raid coincided with a serious weakening of our army in Sicily, the retention of which island was vital. Collingwood was late in getting news of the attempt and failed to intercept Ganteaume, who succeeded in effecting his object and regaining Toulon unmolested.

Sir John Laughton considers that Collingwood "failed to grasp the secret of the tactics which had triumphed at Trafalgar," and that "He seems to have fancied that the magic of the 'Nelson touch' lay not in the concentration of the attack but in the formation in two columns; and by dispersing the attack along the whole line was prepared to repeat so much of the tactical blunders of a past age."² We cannot compare Collingwood's order with Nelson's memorandum without a thought for the different situations they were designed to meet. The problem Collingwood had to solve must be clearly understood, for the magic of the Nelson touch lay in the whole conception of the Trafalgar attack to meet his diagnosis of a particular case, not in any quack recipe for victory.

Collingwood had to prevent Sicily from being unduly exposed, and he had to destroy the French fleet. From the "Standard," who had been driven from her station off Corfu by Ganteaume, he learnt that the French were out with ten ships of the line, including two first rates. He had himself fifteen, of which three were of three decks. He was faced with a similar situation to Hood with Corsica in 1794, and Keith with Minorca five years later. Keith felt "shackled" with a defenceless island and refused to go far afield, a policy which Collingwood, who was a junior flag officer in the fleet at the time, condemned bitterly.³ Hood left Corsica to look after itself, and in spite of his superiority went in search of the enemy with his whole force. Collingwood refused to be drawn to either extreme. He detached Martin with three ships to Palermo to prevent an attempt on the island during his absence, and keeping the heavy ships with himself went in search of Ganteaume with the remaining twelve.⁴ Nelson stipulated that the lee division at Trafalgar should be one-fourth superior to the enemy cut off, and it looks very much as though Collingwood used this formula in assessing the strength he could spare to Martin's detachment. First rates were commonly reckoned as two-deckers, and calculating on that basis he had fifteen units against twelve French.

With the conditions in mind, is it just to condemn Collingwood's design as a repetition of past errors? Nelson premised that he should be somewhat inferior to Villeneuve; consequently he could only hope to obtain a decisive victory by concentrating a local superiority on one part of the line, and overwhelming the enemy there before they

¹ Coll. Corr., Vol. I., p. 120.

² Dictionary of National Biography.

³ Coll. Corr., Vol. I., p. 107.

⁴ James, Vol. IV., p. 293. It is not clear, however, what had happened to "Repulse" and "Standard."

could be succoured by their friends. To this end he proposed to keep the ring while Collingwood, with sixteen, cut off and "effectually completed the business of twelve sail of the enemy." Against Ganteaume, therefore, Collingwood had an absolute superiority equivalent to the relative superiority Nelson had given him to deliver the decisive blow at Trafalgar. It is difficult to see that he had any concern beyond getting alongside the enemy as quickly and as simultaneously as possible. This his order provides for. He first emphasizes the necessity for strictly maintaining the order of sailing during the night. The two columns are to be sufficiently far apart to permit manœuvring, and the ships in their respective columns are to be in the closest order possible; among the details at the end of the order he adds some practical instructions to aid in carrying out these orders. The importance he attached to this is evidently inspired by his anxiety to guard against the confusion in which Nelson found his fleet at day-break on October 21st. The order indeed has this additional interest, that it is the only existing comment by Collingwood on the Battle of Trafalgar. He feared, perhaps, that any criticism of his might be construed into an attempt to take some of the credit of Nelson's victory to himself, and it is only here, in his own battle orders, that we get some indications of his considered opinion on the lessons of that day. After following Nelson's precedent of giving independence to the second in command once the attack has developed, he proceeds to orders which show clearly that he rejected the almost perpendicular onslaught which was made at Trafalgar. The object of the approach in columns is to carry the fleet into a position to begin fighting in the shortest possible time, and by delaying deployment into line until the last moment keep the enemy in doubt as to where the blow will fall. At Trafalgar the expected deployment was never executed, despite an effort by Collingwood with his division, and the bulk of the witnesses agree with Codrington, who said: "We all scrambled into action as soon as we could." The result was that the column leaders suffered cruelly. The casualties in the "Victory" were particularly severe, and although the "Royal Sovereign" got off more lightly during her actual approach owing to her greater speed and Collingwood's skill in covering her with smoke by firing an occasional gun, she made up for it by being engaged alone in the heart of the combined fleet for twenty minutes before any other English ship came into action. To deprive the enemy of the advantage conferred by such an independent onslaught, and to ensure a simultaneous impact, Collingwood gives scientific instructions for the relative bearings and distances to be maintained by columns in various circumstances, in order to make deployment effective in every case. Far from "repeating the blunders of a past age," all this part of the order appears to the writer to form a valuable supplement to Nelson's memorandum.

When pondering the means to some end it is curious how sometimes a single consideration will act as a catalyzer, and cause independent ideas to coalesce suddenly and form an entirely new plan with the rapidity of a chemical change. So Napoleon, trying to draw our fleets from Europe, devised an attack on our West Indian possessions,

from which sprung his famous design for a concentration at Martinique and surprise return in force to the Channel. One wonders if Nelson's ready sympathy perceived that Collingwood felt more than he showed at having to surrender the command to him at a time so rich with the promise of an unparalleled opportunity, and if a sudden determination to give his old friend a conspicuous part in the coming battle may have resolved into their final form all the ideas he was considering for Villeneuve's discomfiture. It must at least have been a factor he took into consideration, for he was at pains to show every possible attention to his second in command. To Collingwood he seems to a great extent to have entrusted the supply and upkeep of the ships, whilst he busied himself with designs for their use. They conferred together constantly, and their letters show us something of the spirit which moved them. "We can, my dear Coll., have no little jealousies. We have only one great object in view, that of annihilating our enemies, and getting a glorious peace for our country. No man has more confidence in another than I have in you: and no man will render your services more justice than your very old friend, Nelson and Bronté." Collingwood replied: "I have a just sense of your Lordship's kindness to me, and the full confidence you have reposed in me inspires me with the most lively gratitude."¹

Happy it was for England in that critical hour that her fleet was led by men whose mutual trust and lifelong intimacy made possible the most candid interchange of opinion, who supplied each other's deficiencies and strove in a noble rivalry to be first in their country's service.

A Commander-in-Chief as Diplomatist.

"Political courage in an officer abroad is as highly necessary as military courage."—Nelson.

The chief command reverted to Collingwood at a most critical moment. While Nelson lay mortally stricken in the cockpit of the "Victory," the van of the combined fleet struggled to tow themselves round; at length they succeeded and stood down towards the mêlée. Here was the movement which Nelson had foreseen, and in order that Collingwood might be undisturbed he had taken on himself to frustrate. At this moment Collingwood learnt that Nelson was dead. "A brotherhood of more than thirty years" was at an end, but Collingwood must act, and act at once, for his friend's victory was in jeopardy. He did not fail. His first signal as commander-in-chief enabled the thrust to be turned, after which the enemy abandoned the fight.

Criticism of his conduct during the subsequent gale has largely neglected the effect of the desperate sortie by the uninjured ships from Cadiz on the morrow of the fight, which compelled him to stop the work of securing his damaged ships and prizes and prepare for another

¹ Nicolas, Vol. VII., pp. 95 and 93n.

battle. Instead of rehearsing that controversy, let us accept the tribute paid to him by Hood and the opinion of that other great veteran, St. Vincent, who declared that "Collingwood's conduct after the Battle of Trafalgar in destroying under difficult circumstances the defeated fleet, was above all praise."¹

Very different to those first few days of epic violence is the laborious monotony of the remainder of Collingwood's command. Trafalgar was the blinding flash of splendour before the storm burst over Europe, and the French armies crashed the old social and political systems to the ground. With Austria and Prussia humbled, Italy overrun, and the Czar cajoled at Tilsit, Napoleon reached the zenith of his power. England alone stood against him. Having already embroiled us with Turkey, he now sought to strike us a mortal blow by compelling the continent to accept his decrees against our commerce. Had his hold over the peoples of Europe been as real as appeared he must have succeeded, but deep down in every country of the continent something had stirred. Suvarof, Nelson, Pitt, the brilliant leaders of the former wars were gone, but now, fostered by the dogged tenacity of men such as Collingwood, began those national movements which, despite countless disappointments and failures, finally overthrew the tyrant. Naturally enough it was at the extremities of Napoleon's empire and near the sea, whence alone it could receive support, that the general resentment first found expression. In Spain Collingwood found a worthy field for the exercise of his tact and that political courage which Nelson demanded in officers abroad.

The motives which guided his policy must be understood, for courage may be said to subdue emotion and follow principle. Without ostentation, quietly and steadily, in public duty as in private life, Collingwood obeyed the two great commandments, and upon this bedrock his intense devotion to his country reposed.

This helps to explain his dislike of fireships, explosive rockets, and such like engines, and is the mainspring of his political maxim: "We should be prepared to do reciprocal justice." His handling of the vexed question of supplies for the fleet from Portugal has already been noticed; similarly he dealt with the Dey of Algiers, who took reprisals because the Malta privateers did not respect his flag or passports. To Castlereagh he wrote: "I have observed nothing in the conduct of the Dey but what is temperate and indicating a desire to preserve harmony, and I think it would be advantageous to the general interests if the same disposition were more manifest in the Admiralty Court at Malta."² The pressing of English seamen out of neutral merchant ships he also deprecated. "What should we say if the Russians were to man themselves out of our ships?" he asked. Collingwood indeed was no bigot; he was always prepared to back his opinions with good arguments. Gibraltar Bay, he argued, would be untenable if we provoked the Spaniards to the use of fireships, while the maintenance of good relations with Morocco and the other Libyan countries was essential to the supply of the fleet. The seamen

¹ "Letter-bag of Lady Stanhope," Vol. I., p. 72.

² Coll. Corr., Vol. II., p. 242.

question bore particularly hardly on the Americans, and it is noteworthy that on the very day the decision to impress all British seamen found on board foreign merchant ships was despatched from London to the United States, Collingwood wrote, "the affair in America I regard as exceedingly improvident and unfortunate, as in the issue it may involve us in a contest which it would be wisdom to avoid."¹ This is one of many remarkable forecasts we find among his correspondence, and prompts an inquiry into the components from which foresight springs. If such analysis be thought pedantic it should be remembered that it is the factor on which victory largely depends: the fate of many crusades witness that in this world success is not ensured by courage and lofty principles alone.

Foresight is the reaction of sound judgment on accurate information.

Judgment assesses the value of evidence, interprets what is accepted, and forms a decision by balancing the result against experience. Hence the importance of information, the value attached to apparently insignificant news by our modern staffs, and the ramifications of the intelligence systems. Conversely it explains the need for secrecy and censorship. This last appears to have been well appreciated by the French at that time. "The most perfect secrecy is observed by the French of their real intentions" Collingwood complained, and his embarrassment for lack of intelligence at sea was aggravated by the embargo the Americans placed on their ships in reply to our policy of impressment. To this cause he attributed his failure to anticipate or get early news of Ganteaume's raid. "Now there is not a trading ship upon the seas—nothing but ourselves. It is lamentable to see what a waste the waters have become."²

If military information was hard to obtain he spared no pains to acquire political knowledge. He examined everything from "the policy and complex interests of a number of little governments ruled by Pashas and Agas," to the petition of the Russian Bishops to the Czar, not to rescind the anathema on Napoleon—a matter which involved an inquiry into the tenets of the orthodox church.

From the scope of his inquiries it is evident he realized that provincial knowledge alone is insufficient, that a distorted prominence of local affairs will result, which, when acted on, may embarrass the general policy of the country. This was his complaint against consuls. It was Missett's mistaken zeal for the increase of our influence—and possibly his own—in Egypt that persuaded the Government to undertake the expedition to that country in 1807, and afterwards led him to represent falsely that Alexandria was dependent on Rosetta for food, thereby forcing General Fraser to undertake the disastrous attack on that place. Later the Admiral's wrath descended on the consul at Tripoli, who was "panting for a political intrigue, a little snug war of his own making."³

¹ Coll. Corr., Vol. II., p. 74.

² Coll. Corr., Vol. II., p. 129.

³ Coll. Corr., Vol. I., p. 107.

That Collingwood was sensible of the difficulty of always preserving a correct perspective is shown by his apology to Lord Howick. "It sometimes happens that circumstances are so connected with general politics that for persons bred as we are, seamen and not statesmen, great allowance must be made by His Majesty's Ministers. It was your Lordship's free and friendly communications which, making the subject familiar, gave me confidence in the execution, and I hope I shall receive the like advantage from Mr. Grenville."¹ Naval officers cannot be expected to keep in touch with the shifting currents of diplomacy which affect general policy without the confidence of ministers. Co-operation is essential, for, on the other hand, novel situations abroad may arise which those at home find difficult to understand. Such an instance was the condition of Spain after the rising. The qualifications of the army officers sent by the Government to study and report facts seem to have been limited to a knowledge of the language,² consequently, the information transmitted by Collingwood was eagerly welcomed. The Prime Minister thanked him "for descending to minute particulars and anecdotes, which throw much light upon the public mind and give great assistance to His Majesty's Government in forming their opinions."³

Collingwood then had considerable qualifications as a diplomatist. For a naval officer he was unusually well informed; he possessed the confidence of home statesmen, and his judgment was guided by the loftiest and most enduring principles.

Failures of his Subordinates.—The want of such attainments in some of his subordinates led to failures which help us to appreciate the importance of such qualities. Sir Sidney Smith's judgment was warped by vanity. In Italy, as elsewhere, among a few valuable services we find many dictated solely by self interest and a desire for personal glory. It was enough for him that the capture of Capri enabled him to write a bombastic despatch: he did not concern himself with the reflection that the island was valueless to us, and required a garrison and a squadron to look after it. The same failing dictated the sporadic actions on the coast, which compare badly with the co-ordinated raids subsequently adopted by Cochrane under Collingwood's direction. His unprincipled intrigues at the Sicilian Court caused Sir John Moore to write that "nothing is too absurd for Sir Sidney's folly, nothing too mean or too wicked, where his vanity or his interest is concerned."⁴ Eventually he became so generally distrusted that

¹ Coll. Corr., Vol. I., p. 364.

² Fortescue, Vol. VI., pp. 256-260.

³ Coll. Corr., Vol. II., p. 246.

⁴ Diary, Vol. II., p. 138. Sir John Moore did not mince his words where naval officers were concerned. Nelson was "covered with stars, ribbons, and medals, more like the Prince of an Opera than the Conqueror of the Nile"; Hood "so false and so unmanageable that it is impossible for any general to carry on business with him." Collingwood, on the other hand, he thought "a respectable looking sea officer of the old school, simple and unaffected in his manners. I had a good deal of conversation with him, in which he gave me the impression of a man of sense."

Collingwood seized the opportunity of the Dardanelles expedition to remove him and send him with Duckworth.

The nomination of Duckworth to command that enterprise without consulting himself naturally caused Collingwood considerable surprise. He had already, on his own initiative, sent Louis with a small force, and was considering the advisability of following himself. One can only regret that he had not actually done so. As it was he increased Duckworth's force and despatched him with orders not to await Russian co-operation, but to go at once to Constantinople, where, "having previously disposed the squadron under your orders in such situations as may compel compliance, you are to demand the surrender of the Turkish fleet, which demand you are to accompany with a threat of immediate destruction to the town";¹ half-an-hour only was to be allowed for a reply. Duckworth misjudged the whole affair. He undervalued the effect of the French *levén* in the Turkish councils and imagined that the mere appearance of a British squadron in the Marmora would awe them into compliance. Remembering the orders Collingwood had issued, and his experience at Boston, is it conceivable that he would have lain eight miles off and threatened what he could not execute? Recollecting his watchword "In war my principle is to beat or be beaten," would he have stopped the attack on *Prota*, and lost thereby the opportunity of capturing *Sebastiani* and the Chief *Aga*, which might have given a very different turn to events? Would he have had the crowning folly to fire a salute during his return through the narrows?²

His conduct in Spain should provide an answer.

The Spanish Rising.—The upheaval in that country was so sudden and unforeseen that exploitation of the opportunity devolved entirely upon Collingwood. Unassisted or hampered by instructions from home he displayed a wisdom and vigour in political initiative too rarely seen on such occasions. That he should immediately suspend hostilities and offer assistance against the common enemy was to be expected, but the penetration which not only saw the general needs of the situation but anticipated trivial causes of friction is remarkable. Foreseeing the chief difficulty at once, he wrote to the Archduke Charles and placed a frigate at his disposal. What course the Peninsular War would have taken had that skilful, if unlucky, commander, combined and directed the incoherent efforts of the Spaniards, must remain a fascinating speculation; but the correctness of Collingwood's offer will scarcely be questioned. With equal vigour he combated the proposal of the Junta of Seville to invite the hereditary Prince of the Sicilies to be Regent. That Prince, he trenchantly observed, was neither a great military character nor distinguished for political knowledge nor the next in succession by blood. Of his tact in the conciliation of a recent enemy we have an example in his suggestion that a despatch should be sent to the Canary Islands to detain

¹ Coll. Corr., Vol. I., p. 381.

² James, Vol. IV., pp. 226-228.

all merchant ships until peace should be formally ratified, as until that time they were, of course, legal prize.

His difficulties were great, for the only form of government were the local juntas, who disclaimed responsibility beyond their own province and were mutually jealous. Only the most straightforward policy and personal integrity could have accomplished anything. By Collingwood's counsel the Spaniards insisted on the unconditional surrender of the French squadron at Cadiz; but he could not remove their suspicion that we had designs on that port or temper their confidence to expel the French unaided. The assistance of our army consequently was declined until Portugal joined the movement, when it was landed in Mondego Bay. With difficulty the Spaniards were aroused to the need for taking steps to preserve their colonies. Collingwood prevailed at length on the reluctant Junta of Seville to send a warning to the West Indies, but his utmost endeavours could not persuade them to send out their fleet; the disposition of the fleet, they said, was a national affair, and no junta had the authority to order them out.

The demand for arms, powder, money and horses was insatiable. The Malta armoury was ransacked, and all the forges of Minorca employed making pikes. The first supply of powder was discharged by the Spaniards in favour of some Saint's Day, and it is said Collingwood drily requested them to reserve their next consignment for sinners. His proverbial care for stores extended to public money, but he did not hesitate on this occasion to raise a loan at Gibraltar or to draw bills on the Treasury. Horses could only be obtained from Morocco, and, unfortunately, the Emperor recollected that it was contrary to his religion to sell them to Christians; Collingwood, however, was given to understand that Ceuta would cover a multitude of sins. In the absence of any National Government he was doubtless wise in not communicating this suggestion to the Spaniards.

His decision to refuse transport to the 18,000 Frenchmen who surrendered at Baylen on condition they were repatriated was not upheld by the Cabinet, who arranged a compromise, but there is little doubt his action received their tacit approval, while the general success of his endeavours may be gauged by their extension to him of "full discretionary powers." On the station his reputation was so established that he came to be recognized as a kind of general arbiter. Spaniards, Sicilians and others laid their difficulties before him, and sought his opinion not only on questions of law and policy but in matters of civil contention. His last letter is a reply to the "Governor, clergy, jurats, and inhabitants of Mahon," who had appealed to him for advice in some petty dispute. With the Spaniards he was extremely popular, "they felt in him a confidence they denied to our Government,"¹ and when he went ashore received him with wonderful enthusiasm. No doubt his humane treatment of their wounded after Trafalgar was not forgotten, while his sincerity and impartiality made him so trusted that eventually they consulted him about everything, as if, he said, "I had been a Poffendorf or a Hugo

¹ "Letter-bag of Lady Stanhope," Vol. I., p. 92.

Grotius." Perhaps he kept those worthies by him for guidance amid his difficulties.

Conflicting Anxieties.—Very different was his reception at Palermo, to which court he paid his first visit about this time. "I do not know what possessed them on my arrival, but the consternation seemed to be general. They never desire, I am sure, to see my face again."¹ Such was the effect of the virile, weather-worn seaman on the debauched and intriguing court. One wishes he had sooner interposed personally in Sicilian affairs; had he done so the burdens of our generals in that island might have been lightened. But he was beset by many conflicting claims, and his correspondence refers frequently to the immense demands made upon him. Although at one time he commanded "as large a fleet as ever was employed from England, consisting of thirty ships of the line and eighty ships of war of different sorts," yet "the conduct of the fleet alone," he complained, "would be easy; but the political correspondence which I have to carry on with the Spaniards, the Turks, the Albanians, and all the States of Barbary gives me such constant occupation, that I really often feel my spirits quite exhausted."² In truth, correspondence claimed perhaps too large a place in his administration: whether by choice or necessity he was for ever serving tables. He took pride in the careful construction and phrasing of his admirable letters, but he carried fastidiousness to a fault, so that between the variety of his affairs and his mistrust of deacons he was ever at his desk, and was "seldom on deck above an hour of the day, when he went in the twilight to breathe the fresh air."

His strength suffered in consequence. He endured many months of suffering before he finally broke down, but although body and brain are not wholly independent the correlation happily remained imperceptible until the end. He struggled on until he could no longer rise from his bunk, and then with an almost histrionic touch sent for the book of instructions to satisfy himself that he was justified in resigning his command—a command which for all his diplomatic work had been remarkable for its rigorous blockade of the enemy's ports. He had permitted no relaxation on the score of preserving the fleet in good repair for the day of battle, and had once been the almost incredible time of twenty-two months without coming to an anchor.

The strain, particularly in the treacherous Gulf of Lyons, was proportional. In his own words Collingwood "saw all the men and ships out two or three times." But the Mediterranean conquered him at last, as it did Blake his great predecessor who laid the foundation of our power in that sea; for both the blazing sunlight of their station dried up the failing spring of life before they saw again the green fields of the land they loved.

CONCLUSION.

Collingwood was no genius; he had no involuntary power, but if talent be "the capacity for doing anything that depends on application

¹ Coll. Corr., Vol. II., p. 326.

² Coll. Corr., Vol. II., pp. 118 and 287.

and industry," talent he possessed in the highest degree. He was a great captain, but as an Admiral his renown must rest on his part in the Trafalgar campaign, for then only during his ten years war service in flag rank he saw a hostile fleet at sea. The success and importance of his political work in the Mediterranean has been considerably neglected, but we can judge the value set upon it at the time by Lord Mulgrave's reply to his request to be relieved. "I know not," he wrote, "I know not how I should be able to supply all that would be lost to the service of the country, and to the general interests of Europe by your absence from the Mediterranean."¹ What those services were should have sufficiently appeared: he upheld the right wing of our influence at that time, as Saumarez in the Baltic maintained the left.

But a cold estimate of his ability fails to do him justice, for it may be that Collingwood will be remembered when greater men are forgotten. The weight of his blows in battle, his share in the sea-fight which has become the symbol of a national tradition, his romantic friendship with Nelson, and his perpetual watch and lonely death at sea appeal to the heart and stir the soul. He exercises a charm that cannot be subjected to analysis. In his endless exile from all he held most dear he conjured up pictures of his home and family, which touch his letters with singular beauty, and he dreamt continually of the day when he should return to England "to descend the hill of life with composure and comfort." But it was, not to be. For his country he died a stranger to his own daughters, and duty deprived him of a son.

De Vigny has shown the intimate feelings and noble resignation of the Admiral in terms of sober melancholy,² but the best portrait we have of Collingwood is from his own pen. "I am sorry to find my picture was not an agreeable surprise," he wrote to his wife, who was alarmed at the change in his appearance. "The painter was reckoned the most eminent in Sicily; but you expected to find me a smooth-skinned, clear-complexioned gentleman such as I was when I left home, dressed in the newest taste, and like the fine people who lived gay lives ashore. Alas! it is far otherwise with me. The painter was thought to have flattered me much: that lump under my chin was but the loose skin from which the flesh has shrunk away; the redness of my face was not, I assure you, the effect of wine, but of burning suns and boisterous winds; and my eyes, which were once dark and bright, are now faded and dim. The painter represented me as I am, not as I once was. It is time and toil that have worked the change, and not his want of skill. That the countenance is stern will not be wondered at when it is considered how many sad and anxious hours, and how many heartaches I have."

There we see the man who may well stand for the type of patient endurance which overcame Napoleon: the most steadfast of many devoted seamen who brought us safely through the shoals and darkness of those days, and with their achievements fired beacons for all who should follow.

¹ Coll. Corr., Vol. II., p. 254.

² "Souvenirs de Grandeur Militaire," Chapitre VI.

AUTHORITIES.

I.—No original work has been possible.

II.—The references are to the fifth edition of Collingwood's Correspondence. Additional letters may be found in Nicolas' "Letters and Despatches of Lord Nelson," the "Letter-bag of Lady Stanhope" (Vol. I., Chapter II.) and in W. Clark Russell's "Life of Admiral Lord Collingwood."

III.—Biographical material from articles in Dictionary of National Biography on Collingwood and Samuel Graves, Naval Chronicle, Vol. XV., p. 15, and Vol. XXIII., p. 379, and Mahan's "Life of Nelson."

IV.—For Collingwood's relations with St. Vincent and Codrington see lives by Brenton (Vol. I., Chapter XVI.) and Bouchier (Vol. I., pages 46-75).

V.—For general histories "Political History of England," Vol. X., Hunt and Rose's "Revolutionary and Napoleonic Era," have been used. Naval Histories: Mahan's "Influence of Sea Power upon French Revolution," Corbett's "Trafalgar Campaign." With James (Vol. IV.) compare Brenton (Vol. II.).

VI.—For military events in Mediterranean after Trafalgar, Fortescue's "History of British Army," Vols. V. and VI., Bunbury's "Passages from the Great War with France," Part II., and Sir John Moore's Diary, Vol. II., Chapters XXII.-XXIV.

VII.—To the Naval History Prize Essay, 1914, Lord Hood, by Lieutenant Guy E. Cooper, R.N., I owe many suggestions for the form a biographical essay may take.

THE SIEGE OF MAUBEUGE

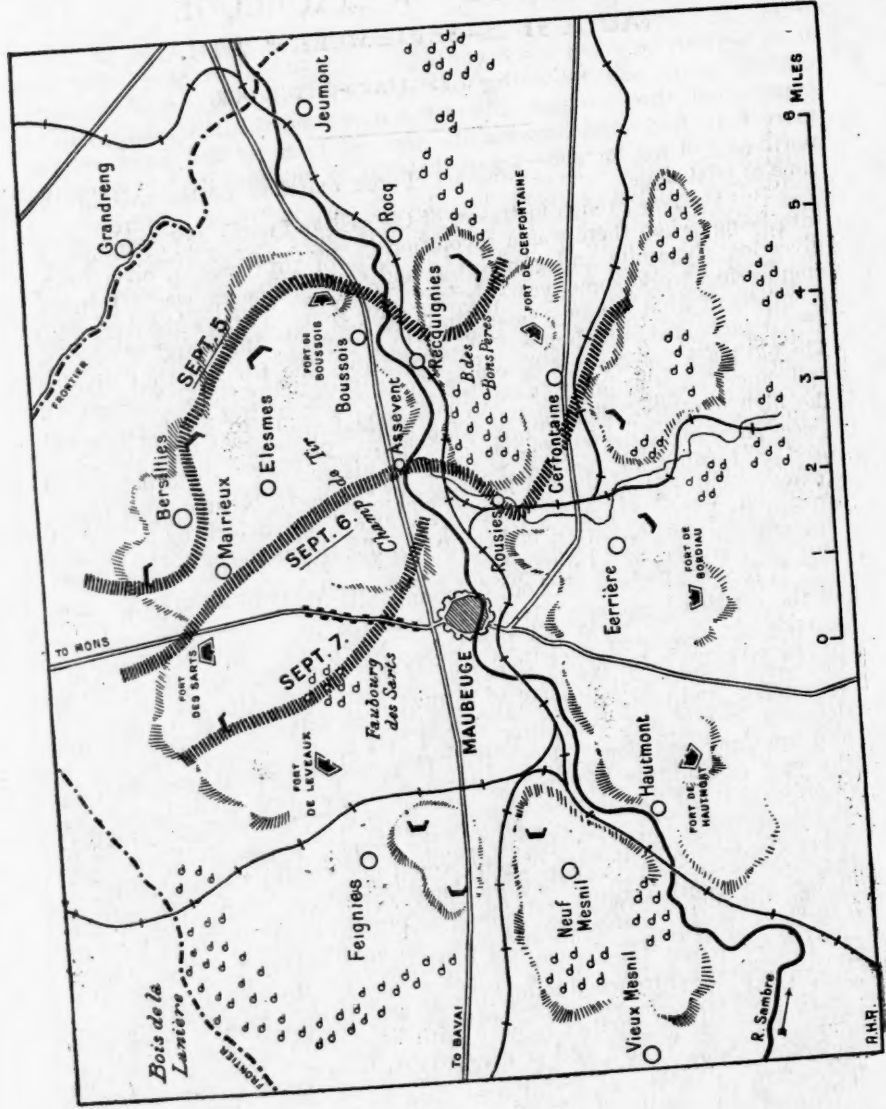
(AUGUST 25—SEPTEMBER 8, 1914).

By CAPTAIN A. HILLIARD-ATTERIDGE.

WHEN the British Expeditionary Force marched northwards in the third week of August, 1914, to take its part in General Joffre's great offensive in Belgium, its advance was by the neighbourhood of Maubeuge on the upper Sambre to Mons. The Mons of 1914 was an open town, the headquarters of a busy colliery district. Maubeuge was a fortress, as it had been for centuries. In earlier days Mons had the same dangerous dignity. From the wars of Louis XIV. onwards Mons and Maubeuge watched each other at close quarters across the frontier that divided France from the Austrian Netherlands. When Belgium became an independent kingdom, Mons had the good fortune to be *declassé*, but Maubeuge retained its military rank as a "place of arms." In 1875, when General Séré de Rivières drew up his scheme for the defence of France, and most of the old fortresses of the north became open towns, Maubeuge was chosen as the centre of a huge "entrenched camp." With another and greater entrenched camp at Lille, it was to guard the frontier towards Flanders and Hainault.

It is a small place of about 6,000 inhabitants, built upon both banks of the canalized Sambre. It lies close to the Belgian frontier and just outside the coal-field of the Borinage. Northwards, in the busy days of peace before 1914, smoky skies told of the colliery region near at hand, but Maubeuge was the centre of a quiet agricultural district, a land of low, flat-topped undulations, with a chalky subsoil—much pasture and not a few clumps of wood. Vauban had fortified the little town with a ring of bastioned ramparts. In the wars of the French Revolution redoubts had been erected on the surrounding hills, and Maubeuge was an entrenched camp where armies mustered and accumulated their magazines of supplies for the campaigns against Austrians and English in the Netherlands. The coming of the railways gave it a new importance in the nineteenth century. The railway that follows the line of the frontier from the Channel by Lille and then by Mezières on to Verdun and the east of France passed just beneath its southern bastions. Westward a junction threw off two branches, one by Mons to Brussels, the other by Le Cateau to the Oise valley and Paris. Eastward another junction linked the frontier railway with lines down the Sambre valley by Charleroi to Namur and southward by Hirson to Rheims and the upper Marne region. It was with good reason that Séré de Rivières chose it as the centre of one of his new "entrenched camps" or ring fortresses.

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In his original plan for the new works there were to be nine forts, five on the north side of the Sambre, four to the south of it. The space thus enclosed would be about eight miles by six, and this enabled the forts to be pushed out far enough to protect the town and its magazines from bombardment by the artillery available in 1875. The northern forts were to be about 2,500 yards from the Belgian frontier. But the original plan was never completed. Only six forts were actually constructed, three on each side of the river, and this left a huge gap of more than five miles between the forts of Boussois and Sarts, on the north-east of the fortress—a gap that was to influence its fate when the time of trial came.

But the new French fortresses of the east and north had hardly come into being, when there was a revolution in the means of attack. Nitro-glycerine, dynamite and gun-cotton had come into use for quarry and engineering work some years before. Chemists were discovering new members of what is now a huge family of high explosives, and artillerymen at last succeeded in finding ways to adapt them safely to warlike purposes. The old black powder was becoming obsolete. Guns were growing bigger and ranges lengthening, but this did not so much matter as the fact that the high explosive shell had become a flying mine that could blow to pieces anything in the way of masonry, brickwork, or steel and iron hitherto used in fortification, and make deep and wide craters in earthworks. It was soon recognized by the engineers—however reluctantly—that all Séré de Riviére's new fortresses and barrier forts had suddenly become obsolete. As for Maubeuge, its six outlying forts would be almost as useless as Vauban's old bastions for a prolonged defence against the new siege artillery.

Could the works be remodelled? Could some antidote be found for this new terror of modern war? For awhile the engineers thought they had found it in the use of thick masses of concrete. Experiments were made, and projects elaborated, for the reconstruction of the existing defences, but it was some time before definite decisions were adopted and anything was done. Even then there was a natural hesitation at the vast expenditure required, and work was at first limited to some improvement of the eastern fortress barrier. The northern frontier was neglected. The accepted view of the French General Staff was that either the Germans, in case of war, would not violate the neutrality of Belgium, or that even if they did their operations would not extend beyond the Meuse valley. Lille became practically an open town. Its forts were disarmed. Maubeuge remained a fortress, but was regarded as of very minor importance, and despite the reports of successive Governors of the entrenched camp little was done to remedy its deficiencies.

In 1894 six redoubts were constructed in the intervals between the forts. They were very inferior works. Each mounted two guns of moderate calibre, and had as shelter for the garrison a few concrete dug-outs in which the men had just room to sit down. There was no water supply, no means of cooking; in fact, the works were not habitable. One fort only, Bourdieu, to the south of the town, was strengthened with

beds of concrete. More than ten years later General Lebon, then commanding the district, reported that Maubeuge had neither the defences nor the armament that would enable it to make an effective resistance, and that as matters stood it merely gave an enemy the opportunity of scoring an easy success, and was thus more dangerous than useful. In 1910 the War Ministry at last decided to do something more. It was ordered that the improvement of Fort Bourdieu should be completed, and disappearing turrets for light artillery and machine guns should be added to some of the other forts. This was done. But a further order that a strong work should be erected to close the gap on the north-east, and wire entanglements provided for all the permanent works, led to no result. The order was not executed. The fact was that the authorities at Paris did not believe that Maubeuge was of much importance. In June, 1912, a memorandum of the Ministry of War noted that there was no reason to take into consideration a regular siege of the place. The most that was to be expected was that it might have to resist for a short time the attack of an army and its field artillery. In case of war it would at most serve as a *point d'appui* for an army of operations.

In 1914 General Fournier, a distinguished engineer officer, who had long served on the General Staff and had planned and executed, amongst other important works, the new defences of Bizerta, was appointed Governor of Maubeuge. He was so impressed with its deficiencies that he went to Paris and urged on General Joffre the necessity of remedying them at once. This was in June, before the tragedy of Serajevo had brought the danger of war into sight. "You ought to be an optimist," said Joffre in reply to him; "I will answer for Maubeuge, and send you to Germany with your 30,000 men to besiege Metz." When Fournier returned to Maubeuge General Lanrezac, of the Conseil Supérieur de Guerre, arrived there on a tour of inspection and went over the defences with him. "Your fortress is no good," said Lanrezac; "your forts would not stand. But the Germans will not get across the Sambre, and, for that matter, if you were besieged I would come to your help." No wonder Fournier was anxious when a few weeks later the war came and its first days brought news of German armies in the Meuse valley, and German howitzers wrecking the forts of Liège. On August 3rd he received a report from Belgium that German cavalry patrols had already shown themselves near Huy, between Liège and Namur, and had an army behind them. He telegraphed the news to Paris, adding that Maubeuge was not ready for defence, work had hardly begun and it would take ten days to make it possible to offer any resistance. The Minister of War evidently regarded the General as a fussy, nervous man, who would persist in worrying him about the needs of the fortress, and he promptly published a decree depriving him of his command and naming his successor.

Luckily for Fournier and for the Allied cause, General Pau arrived next day to inspect the fortress. He found that Fournier had already every man of the garrison, the reservists as they arrived, and some thousands of civilian labourers, hard at work strengthening his defences

and preparing to make a determined fight. Pau saw that a mistake had been made. He told Fournier that he would have the decree withdrawn, and at the same time gave it as his opinion that the General had a most difficult task, and that if he were attacked he might at most hold out for four days. To the staff of the fortress he said, "I congratulate you on having a chief like General Fournier." He was doing what he could to remove the adverse impression caused by the action of Messimy, the War Minister. On receiving Pau's report Messimy telegraphed to Fournier:—"General Pau has told me of your vigorous efforts to place Maubeuge in a state of defence. The Official Gazette is withdrawing the decree which I issued when ill-informed. I send you my congratulations and encouragement." A few days later—on August 9th—the Minister sent one of the officers attached to his bureau to Maubeuge, to serve on General Fournier's staff. The officer chosen for this duty was Commandant Paul Cassou, of the 4th Zouaves. He has written a most interesting account of his experiences,¹ which throws much new light upon an important episode of the war, of which we heard very little in England at the time, and still less was heard in France, where the censorship was even more rigid than on our side of the Channel. Major Cassou writes with refreshing frankness. He spent fourteen months as a prisoner of war with General Fournier in Germany, and it is clear that he speaks for him. Devoted to his chief, he writes with a strong sense of unmerited grievances. He considers that the silence of officialism as to the gallant and determined defence of Maubeuge has led to Fournier's services being not only underrated but misrepresented. He thinks that the Governor of Maubeuge has even been blamed where he should have been praised. He certainly makes out a good case. One cannot accept all his criticisms of the conduct of the French General Staff in the first weeks of the war, but one can without hesitation agree with him that Fournier made a magnificent defence and rendered services of the highest value to the Allied cause. Indeed, one may say that if anything Major Cassou understates the claims he might have made, and does not fully realize the decisive effect on the campaign produced by the obstinate defence of Maubeuge.

We have seen that the works of the place were incomplete and out of date. The only fort that had been partly reconstructed (Bourdau) was on the front least likely to be attacked. Only one fort had wire entanglements to protect it. There were no telegraph or telephone lines linking up the defences, and no light railways for the transport of munitions. For fronts aggregating about twenty-four miles, the place had 435 guns of various calibres. The best and heaviest of these were only 6-inch guns. There were forty-eight of them. Their range was just under 10,000 yards, so that they would be out-ranged and unable to reach the enemy's siege artillery. There were twelve 8½-inch howitzers,

¹ "*La Vérité sur le Siège de Maubeuge*," one of the remarkable series of war narratives now being issued by Berger-Lévrault, the French military publishers, under the general title of "*La Guerre—Récits de Témoin*," these "witnesses" being mostly combatant officers.

but they ranged only up to 6,000 yards. Ammunition supply was about 1,000 rounds per piece, but none of the magazines were really protected from heavy shell fire.

The garrison amounted to about 40,000 men. This looks—on paper—a formidable force. But the only first line troops were three battalions of the 145th Infantry. There were three more battalions of the 345th Reserve Regiment and four battalions of Colonial Reservists. The rest was made up of six regiments of Territorials, men over forty, with officers who were mostly not well trained for active operations. There were twenty-four companies of garrison gunners and four field batteries (sixteen guns). The cavalry was represented by two reserve squadrons of the 6th Chasseurs. There were seven-and-a-half companies of engineers, and 500 Douaniers (Custom House men), gathered from the neighbouring frontier, were formed into two small battalions each of 250 rifles. No aircraft were available for reconnaissance. There had been an air squadron at Maubeuge before the mobilization, but the aeroplanes were sent away to Châlons, and shortly after orders arrived to send to the same place two airships, the "Montgolfier" and the "Dupuy-de-Lôme," hitherto stationed at Maubeuge. They had an unfortunate voyage. Mistaken for enemy aircraft, they were shot down and destroyed by French guns as they approached Châlons.

From the first days of the mobilization Fournier had every available man employed in improving the defences. New works were constructed, including a large redoubt to close the gap on the north-east. Barbed wire and other obstacles were placed on miles of front. Light railways were laid down, and telegraph lines organized to link up the outlying works with the Governor's post of command, installed in an old casemate near the Port de France. The material available made it possible to construct only lines on poles, and when the bombardment began these proved to be unreliable. They were cut again and again and at last became useless.

Supplies were collected, and as soon as the German advance into Belgium became pronounced steps were taken to send away to the interior of France most of the townsfolk and the villagers of the neighbourhood, so as to economize food. It was impossible, however, completely to evacuate the civil population.

At first the general opinion in Maubeuge was that the Governor was needlessly anxious and was taking unnecessary precautions. The Germans would be badly beaten in Belgium and there would be no siege. Major Cassou was sent more than once into Belgium and to the Ardennes border to collect information. He found the same optimism in the French Army of Lanrezac which was concentrating about Mézières, and moving up by the French bank of the Meuse. He paid visits to Namur on August 11th and again on the 15th. He also visited the French cantonments on the Meuse. At Namur the Belgian Staff told him of the huge armies that were pouring into eastern Belgium, but French Staff officers seemed at first to regard this as a kind of side show of the enemy's scheme. In any case, they said, the wave of invasion

would not spread so far as Maubeuge. On the Meuse front there was much rejoicing over successful skirmishes between French and German patrols on the Ardennes border. Along the river at Dinant on August 11th soldiers were peacefully fishing, and the Colonel of the regiment that held the little town told Cassou, "The Germans are afraid; they run away from us; they are beaten already." While at Namur there was the same talk of the half-hearted tactics of the German patrols: "They are in a fright. They are not the terrible fellows we thought," said a Belgian officer.

On August 15th the Belgian Staff at Namur was already less optimistic. King Albert's Army was retreating; when would the promised help of France come? they asked anxiously. While Cassou talked with them a German aeroplane was throwing bombs into the streets. From Namur he travelled to Dinant by the west bank of the Meuse in a motor-car. All seemed at first peaceful enough. August 15th is one of the great feasts of the Catholic Church, and as he sped southward he passed a procession and heard the church bells ringing. But then came the sound of cannon towards Dinant, and he arrived there just as the 1st Corps under D'Esperey had completed its repulse of the German attack. It was the first serious fight on the northern front. He met Lanrezac, the Army Commander, who spoke of a siege of Maubeuge as all but impossible. Fournier was less hopeful when Cassou arrived at the place that evening bringing the good news from Dinant. "Why were the Belgians retiring on Brussels and Antwerp?" asked the General. "Why not join hands directly with the Allies instead of leaving the great gap through which the German invasion would presently be pouring?"

The next week saw the arrival of a British aeroplane squadron. Orders had been given to prepare the "Champ de tir," the rifle and artillery range north-east of the town, as their aviation ground. The airmen arrived on the wing, and were saluted by a fusillade from French rifles, for they had not been expected that day, and were taken by excited spectators for enemies. Luckily the shooting was bad or the range too great for any damage to be done. The airmen made several flights across the frontier, but their stay at Maubeuge was short. On the 23rd, the day of Mons, they were ordered away. On the 22nd British troops *en route* for Belgium had passed by Maubeuge. A Scottish regiment marched through the town to the sound of the bagpipes amid enthusiastic cheers from soldiers and civilians. That day the cannon of Charleroi could be heard growling in the distance. Next day the cannon-thunder came still louder from the nearer battlefield of Mons. That evening it was known at Maubeuge that Lanrezac had been defeated about Charleroi, and soon there were indications that things were not going well at Mons. The flight of the Belgian peasants had begun, an ever-increasing stream of fugitives passed by Maubeuge, asking in vain for shelter in its streets. The Staff officers had the hard task of urging them to push farther south. The place now obviously in danger could not be encumbered with more civilians. Men in khaki arrived, some of them wounded,

all worn out with fatigue.¹ Sir John French wired to Fournier that he relied upon the fortress to assist in covering his retirement. General Sordet arrived on the 24th and asked to be allowed to give his tired squadrons of cavalry a rest under cover of the forts, but was told by Fournier that he could not run the risk of having this mounted division blockaded in the entrenched camp. "Our men and horses are dead beat and can do no more," said one of Sordet's officers, but Fournier was rightly inflexible in his refusal. It was well that it was so, for Sordet's cavalry did good service two days later in covering Smith-Dorrien's retirement from Le Cateau.

On Tuesday, the 25th, came news of the approach of the enemy. Fournier announced that the last train for the south would leave Maubeuge at 3 p.m. It steamed away crowded with fugitives. After it went all the locomotives in the depot at the railway station, taking with them a quantity of railway trucks. Cassou accompanied the General on an inspection of the defences and saw on every road the miserable crowds of French and Belgian refugees streaming southwards. Military detachments barred their entrance into the place, and there were heartrending scenes as the fugitives pleaded for shelter in the fortress. By nightfall the German advance completely isolated Maubeuge, and the fortress was left to its own resources. That afternoon the two squadrons of chasseurs had made a reconnaissance to the north-east and driven in a German patrol. They brought back a wounded German officer prisoner, who proved to be the Prince of Saxe-Meiningen. He died of his wounds in a few hours and was buried with military honours.

Fournier had organized a reserve or striking force formed of his best units—seven battalions of regulars and reservists, the two cavalry squadrons and the four batteries of seventy-fives. It was commanded by an Alsatian officer, General Winkel-Mayer. Early on the 26th it went out to the westward, encountered a German column near Longueville and drove it back towards Bavai. It was an attempt to delay the close investment. From the southward for hours there came the sound of a heavy cannonade, and the rumour ran that a rescuing army was approaching. But towards evening the firing ceased. "The battle of Guise had ended, and had not stopped the German march on Paris," notes Major Cassou. There is a curious mistake here. The firing must have been the cannon-thunder of Smith-Dorrien's splendid fight at Le Cateau, about twenty-two miles away. Guise is some fifteen miles farther south, and there was no serious fighting there until Lanrezac fought his rearguard action on the 29th.

During the night the forts fired on German convoys and columns on the march. They were probably too far off for any result. In any case the enemy's artillery made no reply. The Germans were safely

¹ Major Cassou notes that among the fugitives who took refuge in Maubeuge were about a hundred British soldiers who became separated from their regiments and escaped capture by making for Maubeuge in small parties. They were formed into a company and took part in the defence of the place, but we have no further details of their services.

installing their heavy siege train at long range, just inside the Belgian frontier line to the north-east of the place.

On the 28th the reserve made another sortie and drove the enemy's advanced troops into the woods on the Avesnes road. Next day at 1 p.m. the bombardment began.

The first shell burst in a school that had been converted into a hospital and set it on fire. The patients were safely removed. After this the enemy's gunners made better practice and the fire upon the town was concentrated on the neighbourhood of the Port de France, where the headquarters of the defence was installed. It showed that the attack had inside information, for the installation was an improvised one. Major Cassou gives a considerable amount of detailed evidence as to the amount of organized espionage in the fortress; the enemy's agents—sad to say—were mostly Frenchmen. Besides long range shots at the Port de France there was a heavy bombardment concentrated on the Fort of Boussois. The weakest front of the place was being attacked. For three days the shells rained upon the fort. All the guns were dismantled, the cupola containing its one 6-inch gun was wrecked, the walls came down in heaps of rubbish, vaults, supposed to be bomb-proof, were penetrated. Sixty men of the garrison had taken shelter in a vault, originally destined for use as a powder magazine, but by this time empty. It was protected by a metre of masonry and six metres of earth, but the roof collapsed under the explosion of a giant shell, that deeply cratered the earthwork, and the sixty men were buried in the ruin. On the very first day communication with the fort became difficult. The telegraph was cut again and again, and at last the attempt to repair it had to be abandoned.

The fire came from the heavy siege batteries to the north-east inside the Belgian frontier. The guns were mostly Austrian 11-inch Skoda howitzers, throwing a 760 pound shell, but there was at least one of the giant Krupp howitzers of 16½-inch calibre throwing a projectile weighing about 1,800 pounds. At first the defence was not aware of the presence of this giant gun, and English accounts of the siege deny that it was in use, but as we shall see there is evidence that it was in action. Major Casson makes a brief allusion to the story of concrete platforms for the siege guns prepared in advance by German agents before the war, and seems to think there was some foundation for it. Probably, as he was a prisoner in Germany at the time when the story was started, he has never heard of how completely this legend of the war was demolished. It originated with a Paris paper noted for its occasional outbursts of wild sensationalism. It told how, some months before the war, a Belgian financier bought land at Lanières, near Maubeuge, and began to erect there a locomotive factory. But little work was done beyond laying down massive concrete foundations. The real buyer was, however, Krupp of Essen, and the factory project was a mask for preparing platforms which were ready for the big howitzers when the siege of Maubeuge began. A little later the same paper that started the story had to explain that it was a myth. The land had been bought by a Franco-Belgian company which had no German connections. Its work on the new

buildings was stopped by the war, and finally no German guns were mounted at Lanières, which is west of Maubeuge. All the big howitzers were miles away on the east side of the fortress. The story caused an absurd scare in England. Concrete platforms, prepared for the siege of London, were discovered every day by the scaremongers. General Sir Desmond O'Callaghan, an Artillery officer, who examined these finds for the War Office, proved their harmless character. They were garden terraces, cisterns, foundations for new buildings, in one case the roof of a factory which was intended to be the floor of a second storey, and they were almost invariably in places where no one would think of mounting a gun in the strange event of a siege of London.

Captain Keim, who commanded at Boussois, was badly wounded on the first day. His colleague, Captain Thabar, took command and held on to the ruins. The men mostly took refuge in the adjacent trenches and under what cover they could find in rear of the fort. All its guns were silenced, but the garrison waited to repel an assault on the heap of ruins that marked the site of the work. On the night between the 30th and 31st there was a local panic. Numbers of soldiers came back to the town in disorder, many of them almost mad, suffering from what was later known as "shell shock." At the time this result of shell fire had not yet been recognized as a serious element in the effect of the new explosives. One company held on at Boussois, three had given way. Fournier was able to rally most of them and get them back to their posts, sending up a battalion of regulars to support them.

On the night of the 31st, after three days of bombardment, the position was very serious. The swift destruction of Boussois showed that none of the works on the front attacked could resist the enemy's fire. And there was no means of replying to it. The artillery of the defence was hopelessly outranged, and it was mere waste of ammunition to attempt to answer back. There was no news of relief, or indeed of anything that was happening outside the isolated fortress. Attempts to call up the Eiffel Tower by wireless brought no answer. It was impossible even to fix accurately the position of the enemy's batteries. They were well masked and no aircraft were available for seeking them out. Their general direction only was known and on September 1st General Fournier decided that, as he could not reach them with his guns, he would try to capture and wreck the German batteries by means of a sortie in force.

Fournier moved out with ten battalions and his four batteries of seventy-fives and a pitched battle in the open began at 3 p.m. among the villages on the north-east front. The fighting went on for five hours. The German troops that met the attack were Rhinelanders and Westphalians of the 7th Reserve Corps. German accounts admit that the French fought well and showed great energy and dash in their sortie. One of the Colonial battalions was for awhile within 300 yards of the siege batteries. But the destructive fire of massed machine guns held the French attack, and after suffering heavy loss the besieged had to fall back, with their wearied ranks still further thinned by showers of

bursting shrapnel as they retired in the twilight of the autumn evening. It was a failure that had been very near success. But Maubeuge was now doomed. Nevertheless Fournier was determined to hold out to the last extremity.

There had been a very unpleasant incident during the fighting on the right of the attack. As the enemy fell back before the first rush of the French a battalion of the 145th Regiment moved close up to Jeumont. All seemed quiet in the village and the officer who led the advance was told by one of the inhabitants who met him in its outskirts, "There is no one in the place; you may go in without any anxiety." But as the battalion pushed into Jeumont it found houses and garden walls bristling with machine guns and was driven out with heavy loss in a few minutes. Once more a French traitor had helped the enemy. In the night after the sortie Fournier heavily bombarded Jeumont, and the cannonade came as a surprise to the enemy there and caused them much loss.

On September 2nd and 3rd the bombardment became more intense, though it was distributed over a wider front. Shells still fell in the town of Maubeuge, mostly about the Port de France. The inhabitants were living in their cellars and the fire brigade was busy dealing with frequent outbreaks among the houses. But the main effort of the enemy was directed to completing the destruction of the eastern front of defence. Boussois was a heap of ruins. The German guns were turned on the works to right and left of it. The redoubts closing the gap in the line of forts north of Boussois were destroyed in a few hours. On the right, south of the Sambre, the Fort of Cerfontaine and the neighbouring redoubts were under fire. The turret of Cerfontaine was demolished, and by the evening of the 3rd all its guns were out of action and the fort was almost as ruinous as Boussois.

On the 2nd and 3rd what Fournier reported as infantry attacks, but what were probably only reconnaissances, were repulsed on the north-east front to the left of Boussois. On the 4th, what appears to have been a serious attack on the ruined north-east front was repulsed after hard fighting. Fournier had tried in vain to get into touch with Paris by wireless. On the evening of the 4th he sent off a message to the War Ministry by carrier pigeon. He informed it that the defences of the north-east front were demolished and the artillery silenced. The town itself was being bombarded. The garrison was exhausted. The infantry assault had begun and the situation was critical.

The want of aircraft had throughout handicapped the defence. An artillery officer, it is true, repaired an aeroplane left in a damaged condition at Maubeuge when the flying corps departed, and actually made a daring flight with it, but it broke down again and became permanently useless. The German airmen flew freely over the town. There were no anti-aircraft guns that could touch them. On the morning of September 5th they dropped into Maubeuge two cardboard cases

which were found to contain duplicate copies of the following summons :—

“ Before Maubeuge, September 5th, 1914.

“ To the Governor of the fortress of Maubeuge.

“ As it is clear that, notwithstanding its courageous defence, the place is not in a position to resist the superiority of the attack, I summon the Governor to surrender the place to me in order to avoid further effusion of blood.

(Signed) “ VON ZWEHL,

“ Commander-in-Chief of the attacking Army.”

Fournier sent no reply to this summons, but merely ordered the defence to be continued to the last. On the left bank of the Sambre the line from Boussois to Bersillies was to be held as long as possible, and then the supporting line Mairieux—Elesmes—Assevent—“ yielding the ground foot by foot.” On the other bank the first line of defence ran from the batteries above Rocq to the fort of Cerfontaine. Then the Bois des Bons Pères and the high ground to the south would form a second line. Finally a stand was to be made along the brook that runs into the Sambre near Rousies.

So for nearly three days a pitched battle raged on both sides of the river. The German infantry pressed forward slowly, supported by a hurricane of artillery fire that rained its shells on the town, the outlying villages, the defence works and their communications. On the 5th, after two attacks had been repulsed, the enemy mastered the burning village of Bersillies and the adjacent works, and gained a footing in the trenches about the ruined Fort of Boussois. On the other bank of the river the batteries of Rocq were silenced and the attack pushed close in to Recquignies. The town was on fire. The wireless was put out of action, but was restored by carrying the terminal up a factory chimney. It was of little use, for there came no reply to its appeals for information from the rest of France. The question of making an attempt to save what was left of the garrison by breaking out to the westward was discussed, but the idea had to be rejected. There was no transport available and of the sixteen field pieces only six remained fit for service. Maubeuge knew nothing of the situation in northern France, but with all the region held by the enemy the sortie, even if successful at first, would have inevitably led to an early surrender in the open.

The German heavy artillery was now firing on the northern fort of Sarts, and it was crumbling into ruins. Fort Leveaux would be the next target and would be taken in reverse. Fournier's telegram, on the evening of the 5th, reported to Paris that the forts of Sarts and Boussois had been crushed. Half of the outlying zone of defence had been rendered useless. The town was on fire; the hospitals full. That night the order was given to collect and burn the regimental Colours. The end was near at hand.

Early on the 6th Fournier, while inspecting his line near the ruined fort of Sarts, was shown the base of a 420 mm. shell (16½-inch). This

revealed the fact that at least one of the giant Krupp howitzers was in action. Returning to Maubeuge he saw crowds of fugitives making their way towards Hautmont, which the bombardment had not yet reached. They were mostly civilians, but among them were not a few disbanded soldiers. Discipline was breaking down under the strain of a bombardment in which men went mad. All day the battle continued and hour by hour the enemy gained ground. On the north bank the line from Boussois northwards was in the hands of the Germans early in the day. Then the fight raged along the inner line from Mairieux to Assevent. It was lost, notwithstanding a brilliant counter-attack, in which the ruined village of Elesmes was for awhile recovered. On the south side Recquignies was lost. Then there was a fight in the wood of Les Bons Pères and among the wreckage of Fort Cerfontaine. This line was forced in its turn and a stand was made along the west bank of the Solre brook by Rousies and Ferrière. By sunset the Germans were in Rousies.

That night a series of explosions shook the town. Fournier had blown up several of his magazines to save his reserves of ammunition from falling intact into the enemy's hands. On the morning of the 7th officers and men were utterly exhausted by the prolonged struggle. On the south side the enemy did not attempt to push forward, but on the north his line was close up to the old ramparts, from which rifle fire was being used against his skirmishers. The siege artillery had been turned on Fort Leveaux and in two hours it was in ruins. Shells were also falling on Fort Bordiau, the only work that had been brought up to date. Here some damage was done, but the fort was not seriously injured. At noon Fournier decided that he had done all that was possible to prolong the defence, and sent out one of his staff to the German headquarters to propose an armistice in order to bury the dead and arrange a capitulation. Von Zwehl replied that an officer must be sent with full powers to sign a capitulation; meanwhile the bombardment would continue. Fournier had to yield. That afternoon the capitulation was signed. Next morning, September 8th, the garrison became prisoners of war and the Germans occupied Maubeuge.

The battle of the Marne had begun on the 6th. On the 8th the crisis was approaching. Next day was to see the turn of the tide against the invaders. There can be no doubt that Fournier's splendidly obstinate defence of Maubeuge had contributed to securing this ever memorable victory for the Allies. He was in command of obsolete defences, armed with guns that could not even reach the enemy's batteries and largely manned by second line troops. But his defence compares favourably with that made by other fortresses in the Great War, the opening months of which were characterized by what the French called a *dégringolade des forteresses*, and Mr. Lloyd George described as "the crumbling of fortresses as if they were sand castles on a sea shore." Maubeuge held out for two weeks after the investment, and for eight days after the enemy's siege batteries opened fire. Antwerp fell in four days after the bombardment began, Liège, Namur and Novo Georgievsk in three

Kovno in two and Brest Litovsk in one day. The besieging army, under Von Zwehl, was made up of the 7th Reserve Corps, a division of another Army Corps, a brigade of cavalry, and a siege train under Steinmetz. In all there were about 60,000 men in the investing lines. We may take it that the defence of Maubeuge deprived the enemy in the Marne battle of at least a complete Army Corps. But this was not the greatest service that Fournier rendered to the Allies. At a critical moment he deprived the enemy of the use of a most important main railway line, and its junctions near Maubeuge, and this made it difficult to maintain the supplies of the German right under Von Kluck in the advance to the Marne. General Sir Frederick Maurice points out that in the great battle Von Kluck was trying to envelop Maunoury's left flank before the British advance could relieve the pressure on our Ally, and remarks that :—

"It was a question of hours only whether this part of the German plan succeeded or not. Von Kluck's men were very near exhaustion, and for some days past, partly owing to the constant changes in the position of his troops, and partly to the fact that, while Maubeuge held out, the forwarding of supplies by rail to the German right was complicated and difficult, his supply arrangements had not worked smoothly; his men had therefore not been receiving their rations regularly, and many of the prisoners we captured complained that they were hungry. More important still, Germany, like every other Power engaged in the war, had underestimated the enormous expenditure of ammunition which the prolonged battles of those days entail, and the supply of shells was running low."¹

Thus every day that Maubeuge held out was a distinct gain to the Allies and affected the general course of the campaign. Its fall cleared the railway only in time to assist the enemy in his stand on the Aisne, by opening the new line of supply and also allowing the heavy artillery used in the siege to be brought into action on the heights of the Chemin des Dames.

The French Headquarters had sent no message to Fournier during the siege. But the French official communiqué issued on September 8th contained the following announcement :—

"The Minister of War has addressed to the Governor of Maubeuge the following message :—

"In the name of the Government of the Republic and of the whole country, I send to the heroic defenders of Maubeuge and to its brave people the expression of my deepest admiration. I know that you will shrink at nothing to prolong your resistance to the hour of your deliverance, which I trust is near at hand."

The newspapers which published this communiqué on September 9th added that the Governor of Maubeuge had been mentioned by General Joffre in an order of the day to the Armies, congratulating him on his defence.

By the time these messages were sent the defence of Maubeuge had ended. Fournier and his comrades did not hear till three months later of the congratulations addressed to them. The communiqué was perhaps chiefly intended for camouflage purposes. For the French

¹ "Forty Days in 1914," pp. 178, 179.

censorship concealed the fact of the fall of Maubeuge for many days, and even during the Aisne battle the strategists of the Paris newspapers pointed out the difficulty the enemy must feel in having his line of communications on the right barred by the fortress of Maubeuge. The "fog of war" in which the defence of the place was involved at the time has no doubt contributed to obscure the good service done for France and the Allies by Fournier, and resulted in the gallant defence of Maubeuge being treated as almost an insignificant episode of the war. On his return from a long captivity in Germany the defender of Maubeuge found himself not welcomed as one of the heroes of the war, but arraigned on the charge of having surrendered without exhausting all possible means of defence. The case of the prosecution before the Court Martial was based on an argument that Fournier should have attempted to cut his way out with the remnant of his garrison. We have already seen that such an attempt would have been utterly hopeless. The Court Martial honourably acquitted the veteran defender of Maubeuge. But more than this is due to him, and it is well that the story of the siege should be told in order to show that by his tenacious defence of the place he rendered solid services to the Allied cause, and had his share in securing the first victory of the Marne.



THE RELATIONS OF MOBILITY AND POWER.

By COLONEL H. ROWAN ROBINSON, D.S.O.

THE contending claims of mobility and power furnish, as always, a continual theme for discussion. In the late war they probably received more attention than usual, owing to the variety of natural conditions in the many theatres of campaign and the prolonged stalemate in the main theatre.

In the days of peace, mobility is a hot favourite. Movement, rapid movement, is the heart's desire of the born soldier. He, fortunately enough, never pictures the ugly side of war, or the recruiting sergeant would have a harder task. To him, in early days, the battle is a matter of charging squadrons and galloping guns. In a soberer age, it is quick marches, sudden and forceful strokes that captivate his imagination. And this, not only with the uneducated, but also with the serious student of war. The Russo-Japanese campaign gave strong indications of the possibility of the trench warfare that materialized in 1914, but, for the most part, teachers and students of tactics were inclined to consider this feature abnormal. And naturally so. A change from the fascinating study of the Napoleonic wars to the contemplation of two opposing lines of trenches and the exposition of methods of stationary warfare would have been not only dull, but would have furnished no scope for a man of intellect and imagination. It is impossible to acquire or evoke enthusiasm for the thousand petty details of the trenches, though easy enough to bind attention to the story of Austerlitz. Hence, writers were inclined to ascribe the peculiar features of the Russo-Japanese War rather to the unusual conditions of terrain or climate, than to the combination of machine-guns and wire, which was the determining factor.

Such being the case, the claims of mobility took precedence over the claims of power in the decade that elapsed between Mukden and Mons. And on the whole it was just as well. In the first place, though trench warfare makes severe demands on the lower ranks in courage, endurance, thoroughness, and mastery of detail, it does not require a high standard in intelligence in commanders. A man of quite moderate capacity might, for instance, retain his post for years as a corps commander in trench warfare without betraying his limitations, but once the battle really begins to move, especially if it takes an unfavourable turn, his failings are bound to become apparent. Similarly, with the staff: given leisure and a comfortable dug-out, an Indian Babu might well become proficient at drafting the formal and detailed instructions needed for trench operations, but the same man might fail lamentably when required to produce clear and concise orders amid exploding shells and the quick rush of events. Therefore, a higher standard of training for staff and commanders is required

for mobile than position warfare. There is also the moral side to consider, and, therefore, for the cult of the offensive spirit, it is essential to give mobility the preference over power during the training period. Again, it is only wars between the great nations that lead to a vast stalemate of opposing trenches and, though these are naturally of the highest importance, it is necessary also to prepare for minor campaigns. And even in great national wars there may be side issues where the moving battle will have play, of which recent events have been prolific in examples. But the principal and all-compelling reason to study the war of movement is that the early stages of a campaign are bound to be replete with movement, and if the operations be conducted with sufficient skill and force they might result in such a victory as would obviate the necessity for stationary warfare.

It may be conceded then, that it was theoretically a sound policy to have prepared for a war of movement, and a practical proof thereof was furnished by the fine performance of the well-trained, well-equipped, albeit small force which left our shores in 1914. Our organization exhibited, however, points of weakness, mainly as to lack of machine-guns and heavy howitzers, which a study of the Russo-Japanese War might have rectified. It is not intended to discuss the question of numbers, for that is a matter of national policy outside the scope of this paper, but merely to consider the composition of forces and their equipment, both of which depend on the view taken as to the necessary relations of mobility and power.

At the present moment, while rebuilding our army, the danger will probably lie, with the impress of the trenches still upon us, in allotting too high a place to power, entailing too many and too heavy guns, too much ammunition, too many engineer stores, and generally too many adjuncts of nature not essential to the moving battle. This stage will pass in a few years. It will then be said that, tanks and aeroplanes having conquered wire and machine guns, position-warfare is as dead as the dodo. Mobility will come to the fore again, as always, after a spell of peace; guns will be reduced in size and number, and efforts will be concentrated on aeroplanes, fast-moving armoured cars, and whatever may take the place of horse-artillery. It will naturally be better, however, to avoid either end of the swing of the pendulum and to establish now and at once the relation between mobility and power on a sound basis, maintaining that relation with gradual adjustments to meet modern developments. Having established that principle, it remains to be applied to the building of the army in the matters of estimates, war-establishment, and mobilization. As regards the first, every penny not devoted to the purpose of winning an early and decisive victory should be closely scrutinized; for in the matter of business the best and quickest return is required. Similarly as to war-establishments, only such troops should be included in the first line as go to the winning of that early victory; and, lastly, the mobilization scheme should aim at placing these troops on a war footing at a very rapid rate. Thus, for a given sum of money allotted to the maintenance of an army, expenditure should be generous on the troops that form, and the services that mobilize, the first line corps; in every other direction economy should be exercised.

In such a force mobility will naturally be a prime consideration. Guidance as to its composition can be obtained from the organization of opposing forces which battled backwards and forwards over great distances in 1914. There was in this respect but little difference between British, French, and German corps. The Germans, however, were the best equipped as regards heavy artillery and machine guns. The British had four heavy guns per division and the French practically none—they had gambled wholly on their seventy-fives. The British and French suffered for a long time from inferiority in this respect, but it does not appear to have been very seriously felt till trench lines began to harden on the Aisne. The Germans brought up very heavy metal for the reduction of fortresses, but they used little heavier than their 15 c.m. howitzers in the early moving battles. The latter weapons, however, proved of considerable moral, as well as actual, value, as soldiers never like being shot at with weightier metal than they themselves possess, and caused urgent demands on England for something with which to reply. Had additional machine guns and a battery or two of 6-inch howitzers been added to the establishment of divisions of our striking force, the relations of mobility and power in its composition would have been very nearly ideal. The zeal for mobility had been a trifle overdone, which is hardly surprising in view of the fact that our most recent war—that of South Africa—had been one of constant movement.

Since 1914 there have been great improvements and changes in war material but, with few adaptations, the same divisional organization that proved its worth in that year at Mons would have suited admirably the divisions that fought their way victoriously to the Mons of 1918. It is impossible, however, to apply many of the lessons of the 1918 offensive to the encounter battles at the opening of a campaign. In 1918 both sides were impregnated with the ideas, and armed with the weapons of, trench warfare; attacks were launched from the protection of solid positions of immense extent; perfected communications and the art of camouflage enabled great, and to a certain extent, secret preparations to be effected. All these were unnatural conditions; and, apart from them there seems, as already stated, no reason, judging from the experience gained during actual movement in 1918, to call for alterations in the relation of mobility and power already suggested for the division.

The relations of mobility and power in the stages of the campaign immediately subsequent to the early encounter battles may now be considered. If the campaign be not brought to a close in the first few months, it is pretty sure to stabilize to a certain extent. Quite possibly it will take some form other than that of trench lines extending from frontier to frontier. It may be that natural features, such as rivers or mountains, presenting difficulties to tanks, will be held, or that areas will be flooded or neutralized by gas. But whatever form the stabilization may take, there will naturally be a change in the relations of mobility to power in favour of the latter. More guns, heavier guns, heavier tanks, gas engines, trench mortars, and many devices yet unborn will be needed. All these heavier implements

and the men to work them will be required at a later date than the first line troops. They can, therefore, be furnished by Territorials, and can be mobilized at a leisurely pace. This point needs to be emphasized, as there is no sign of its recognition at present. It is not pretended that Territorials should do nothing else, but it is insisted that they should absorb most of those functions and services incidental to position warfare. As regards the heavy artillery not included in first line troops, something in the nature of the old siege train is required, which may be provided in part by the regular artillery of the coast defences. In this connection the important matter to ensure is that nothing but truly mobile heavy guns travel with the expeditionary force, or the mobility on which the latter will depend for success will be destroyed. The powers that be require to be very firm in this matter, for there are many otherwise sound officers who believe that such weapons as 6-inch guns and 8-inch howitzers can accompany a force without reducing its mobility. The example of the Germans in their early battles may well be followed and a limit set at the 6-inch howitzers and 60-pounder gun. Further, if from one reason or another the battle stabilizes it should be remembered that the solution will probably be found not in multiplying guns and shells, but in looking for the root cause of the block and devising special means and instruments for dealing with it. If power at this period be indefinitely increased, it will inevitably defeat its own object by depriving the army of the mobility necessary for profiting from any success that power may obtain. A consideration of the battles in Flanders in 1917 will at once make this point clear. The ground was so terribly torn up by the guns that it became almost impassable by tanks, or even infantry, while any quick forward movement of artillery in support of successes achieved or any rapid supply of the troops in the conquered positions was wholly out of the question.

Finally, it remains to consider the relations of mobility and power in a force launching an offensive from a long line of trenches. Here there is practically no limit to the power that can profitably be developed. Every gun that can safely be brought up from another front will be useful, provided it can be concealed and does not open fire prematurely. Every tank, every trench-mortar employed will only make the initial break through more certain. Once, however, the line is broken there must be a complete change: instead of power without limit there must be mobility without limit. The enemy once broken must be kept on the move. He must be given no respite, no time to organize counter-attack. The pressure must be such as to turn his thoughts from reaction to measures of safety, and must be maintained till his main communications are reached, so that his whole line may be forced to fall back in disorder or fight at a severe disadvantage.

But how are such results to be achieved? Only of course by immense preparation; but by preparation far different from that adopted by us in 1918. In that year the enemy, though driven back, was never kept on the run; and for that reason he still believes, or pretends to believe, that he was never beaten. The morale of his

best troops was never fully broken. Of the methods to be suggested first and foremost comes that of a great reduction in artillery during the forward movement, for the supply of ammunition except on a small scale is quite impossible to a quickly moving force. And in this there is no great danger, for a complete break through generally entails the capture of the whole of the enemy's heavy artillery, and many of his field guns, and, in case of failure, the plan would naturally remain inoperative. Hence, for the moment, not only is there no opposing artillery worthy of serious consideration, but actually the captured guns may be usefully turned against their former owners, and thus count two on a division. These two points: the necessity of reducing artillery and the value of captured guns, were never fully realized by either belligerent. That offensives were not really pressed as they might have been was largely due to a belief in the convention that guns must always accompany infantry. The Germans, indeed, in March, 1918, did, after considerable hesitation, shed a large number of their guns, and to this cause the depth of their advance may be largely ascribed. In all the earlier attacks the quick passage of artillery across the shelled area presented a most baffling problem, and the supply of ammunition for a rapid advance, prior to the reconstruction of roads, would have been an impossibility. Hence our limited objective system, whose best friends confessed was a damning confession of impotence. Even on the 8th August the advance did not exceed 15 kilometres. But there was no need to have halted on the objective. After a comparatively bloodless victory immense effort was wasted in pushing forward masses of guns which could hardly find positions to occupy or targets to fire at. Such targets as there were could easily have been engaged by the captured guns. The roads and transport would then have been left free for reinforcements to carry forward the attack and for supplies.

By the use of captured guns the problem of the supply of artillery ammunition is simplified to an infinite extent, for not only are plenty of shells usually available on the spot, but more and more are captured as the advance proceeds and reaches the ammunition dumps echeloned to the rear. Further captures of material enable the worn guns to be replaced, so all reasons for economy of ammunition disappear—a great advantage, in that compensation can be found for the comparative scarcity of guns in the more rapid rate of fire that can be maintained from them. Organization, however, is needed, and admirably as our offensives had been prepared in other respects, the use of captured guns was left entirely to personal initiative. Yet better arrangements could easily have been made: the nature and positions of all hostile batteries were accurately known and were plotted on the counter-battery map—the flash spotters, sound rangers and air photographers had seen to that. It only remained to detail the necessary troops to man them, endow them with transport, organize them suitably for prolonged work as independent units, and give them the necessary directions. On the passage from siege to moving warfare numerous units become surplus to requirements, of whom the most suitable for the type of work are the trench-mortar and other artillery

units not taking part in the advance. Some detachments should have horsed, others motor-transport. The selected units should be allotted definite enemy batteries and should follow the infantry closely to prevent the latter from taking trophies, such as dial sights, off the guns. A certain amount of preliminary instruction in enemy equipments is necessary, more especially for artificers, so that guns may be brought into action quickly. Sometimes the enemy abandons his guns in a wholly serviceable condition, sometimes three good guns can be made up out of six. Sometimes the proportion is worse; but as the advance proceeds collections can be made of dial sights and of essential parts that are often removed, so that new captures can be more quickly put to use in the later operations.

Actually, in the 1918 offensive, a fair amount of use was made of the captured material, but only in haphazard fashion, and on the initiative of individual commanders. One brigade of artillery between August 8th and November 11th fired nearly 12,000 rounds of enemy ammunition of various calibres. It might have done much better but, having no transport beyond that with its own batteries, it had to rely on the latter for the transport required and also for the detachments, unless transport motor units happened to be available. The collection of ammunition, therefore, proved a severe tax, and it was generally found more convenient to take the guns to enemy dumps and fire them from there. A common method of collecting ammunition was to give each infantryman who brought up three rounds the right to fire one—quite a quick method of forming a dump. The firing of enemy guns makes a strong appeal to gun crews and inspires them to fine efforts of endurance. And other troops passing by enjoy the spectacle hugely as partaking of righteous judgment.

There is another aspect of the question. If the greater part of the heavy artillery be left behind, a large number of lorries, up to 600 per corps, will be released for other work—a number sufficient to carry forward the infantry of a division. Large quantities of horsed transport of field artillery and the man-power of all artillery units left behind and not manning captured guns will also be available. The man-power might amount in a corps to from 16,000 to 20,000 men, and, allowing 10 per cent. to remain with the guns and 15 per cent. to look after horses employed on fatigue work, there might still remain some 12,000 men, including 1,000 trained signallers, 4,000 riflemen, and about 400 machine guns for whom some use could be found, given previous arrangement. They could not be spared at once, but could be taken forward later on as required in their own lorries. Action of this nature would, of course, only be justifiable when the complete success of the original operation was assured, and would require the most careful organization. Such a breaking up of units would meet with strong opposition, but, granting the soundness of the original premises—that to make a force continuously mobile, the mass of the artillery must be left behind—would it be justifiable to allow a vast number of first-class soldiers to remain idle with the destiny of nations in the balance close by? It will be remembered that when covering the siege of Mantua in 1796 Napoleon did not hesitate to

order Serrurier to spike the guns of his valuable siege-train in order to be able to concentrate the siege-corps for a decisive battle. It is often by breaking conventions that victories are won—and certainly by sticking to conventions in the west we failed even once to obtain complete penetration. The enemy's accounts bear eloquent testimony to the splendour of our achievements, to the desperate straits to which he was driven thereby and to his fears lest we should push home successes to their logical conclusion. We won great battles without reaping the fruits of victory. After a year of peace the German says he was never beaten because he was never routed.

As with the gun, so with the rifle and machine gun. The supply of ammunition cannot be maintained in a rapid advance. In every unit a certain number of men must take to captured rifles and machine guns—a matter of battalion organization. It was done to a certain extent in France. Following up, for instance, an advance of Australian troops, numbers of British rifles were to be found in their tracks. Having run out of ammunition these men, who were born soldiers, had realized this secret of mobility, and had taken to the enemy as a supply agent.

It is further possible, by means of air photographs and the examination of prisoners, to locate supply and ordnance dumps, which also can be utilized as aids to mobility provided arrangements are made beforehand for guarding them and for detailing officers for the distribution of stores.

The use of captured war material has been discussed entirely in relation to an offensive launched from a prepared position, because in such a case by careful organization immense and possibly decisive value can be obtained therefrom. Important though lesser advantages can also be obtained by its use in the early encounter battles. Here, however, preliminary organization is a much more difficult matter, for the enemy's batteries cannot be so certainly located, guns cannot be left behind with skeleton detachments, and no spare units are available for manning captured guns. If, however, a victory, followed by a pursuit be anticipated, commanders could authorize certain infantry and artillery units to re-arm themselves with enemy weapons at their own discretion.

To put the equipments to immediate use, however, the principal types must have been studied in peace time. It seems, therefore, important at all cadet-schools and camps of instruction that equipments of our probable enemies should be taught—guns, machine guns, tanks, and aeroplanes. At the present moment there are plenty available from which to make a selection, but, unless action be taken now, the most valuable specimens will probably be given away, lost, or destroyed.

The following are the main points introduced in the preceding pages on which it is wished to lay special stress. In peace, organize and train for the encounter battle. Include no units in the first mobilization unable to march with a division without reducing its collective mobility. Let heavy tanks, super-heavy guns, materials for

trench-construction, etc., follow later if and when the conflict stabilizes. Avoid stationary warfare except as a desirable postponement of a decision likely to be unfavourable in the near future; but if inevitable bear in mind the danger of multiplying power till it becomes a hindrance, and be ready for a quick change to a high standard of mobility. Attain the latter by keeping alive the offensive spirit and by abandoning at once all concomitants of position warfare and a large part of the artillery, utilizing the men and transport thus rendered available, for the manning of captured guns, reinforcements, road repair, and communication services. Utilize not only the enemy's guns in the rapid advance, but also his rifles, machine guns, and supplies. Make war support war. Cast convention to the winds. They are no victories that must be fought again. Was Arras, was Messines, a victory? Our death roll in Flanders furnishes the instant reply: they were successful battles. In Palestine there was victory as at Jena and Waterloo, a successful battle followed by relentless pursuit—mobility and power rightly correlated and changes in relative values accurately timed.



THE WAR FROM THE GERMAN SIDE.

THE CAPTURE OF LIÈGE, AUGUST 1914.

INTRODUCTION.

THE following is a précis of the account of the first operation of war in the Western theatre prepared for the General Staff Series of Historical Monographs by Captain Marschall von Bieberstein, and published in 1918 as the first volume of that series. Quite apart from the intrinsic interest of the narrative as that of an exploit which first showed to the world the far famed German Army of the Great War at its most formidable degree of efficiency, it also introduces to the reader for the first time the figure of one of the greatest of German soldiers—Erich Ludendorff, afterwards First Quartermaster-General and virtual Generalissimo of the armies of the Central Powers.

THE GENERAL SITUATION.

The Imperial Order for the mobilisation of the German Army was issued in the afternoon of August 1st, 1914. In accordance with the original German plan of campaign, which comprised a rapid sweep with the right wing of the army through Belgium against the northern frontier of France, in order to forestall a possible invasion by the latter of the Rhine industrial areas, preparations were at once begun to deal with the first obstacle to such an advance—the fortress of Liège. This fortress consisted of a circle of twelve forts, $1\frac{1}{2}$ to 2 miles apart, and distant on the average 4 miles from the centre of the city, within which lay the citadel and the fort of La Chartreuse. The fortress was in some respects hardly abreast of the most recent developments; the concrete works were insufficiently concealed, the guns somewhat out of date, and telephonic and observation facilities deficient. The hilly and wooded country also facilitated the approach march of any assailant, and the intervals between the forts could only be watched and protected with difficulty. None the less an attempt to capture Liège by a *coup de main*, as was planned by the German General Staff, might well seem bold to the point of rashness and was without precedent in the history of war.

THE GERMAN APPROACH MARCH AND THE PREPARATION OF THE ATTACK.

A German force of six infantry brigades (11th, 14th, 27th, 34th, 38th and 43rd), under the command of General Von Emmich, General Officer Commanding Xth Corps, and reinforced by cavalry and artillery, was assembled in the area Aachen—Eupen—Malmedy. The IInd Cavalry Corps (2nd, 4th, and 9th Cavalry Divisions) of Von der Marwitz

was also placed under Von Emmich's orders. The heads of the brigade passed the frontier on August 4th, and by the next evening were to be in position to force their way through the line of forts between Forts Liers and Boncelles, while the IInd Cavalry Corps was to advance to a position north-west of the fortress and cut all its communications with the interior of Belgium. After some fighting the cavalry reached the Meuse at Visé on the evening of the 4th, but failed to get across the river, the bridges over which had been destroyed; the 34th Brigade lay close behind them. The line was continued to the south in the direction Hervé—west of Verviers—west of Stavelot, by the brigades in order from the right—27th, 14th, 11th, 38th and 43rd. The 9th Cavalry Division bivouacked with the 38th Brigade; patrols occupied the Ourthe bridges, just below the confluence of the Amblève. All units during their advance had met with opposition from the Belgian civil population, who despite a proclamation by Von Emmich had taken up arms against the invaders.

On the 5th the passage of the Meuse was forced below Visé by the 34th Brigade, which advanced to Hermée, leaving the cavalry corps still east of the river. The 27th Brigade advanced to the outskirts of Fort Barchon, against which two mortar batteries opened fire about 2 p.m. The 14th Brigade took up position facing Fort Fléron, the 11th in front of the interval between that fort and Fort Chaudfontaine. The 38th Brigade pushed its advance guard as far as the Ourthe, above, and the 43rd Brigade exactly at, the junction of that river with the Amblève; the mass of the 9th Cavalry Division remained in rear of these formations. The greater part of the day was devoted to reconnaissance and preparations for the morrow's assault. An isolated attack by the 27th Brigade against Fort Barchon broke down after reaching the wire entanglements.

THE PENETRATION OF THE LINE OF FORTS.

The 38th and 43rd Brigades, united under one command, commencing their advance about 8 p.m. against the south front of Liège, found their progress much hampered by darkness and rain, and ran up unexpectedly against the Belgian positions east of Fort Boncelles; a rough and tumble fight ensued, in which the 43rd Brigade commander was wounded, and the column, falling into disorder, was compelled to halt until daybreak. The advance was then resumed with both brigades in line, and the Belgians driven from several lines of trenches until the attackers reached the Meuse, south-west of Liège. Here they were counter-attacked and forced to retire, and in view of the uncertainty of the situation, the exhaustion of the troops, and the lack of ammunition, it was decided by the officer in charge that the best course was to fall back to the Ourthe. The evening of the 6th, therefore, found the 38th and 43rd Brigades back at their starting point.

The 11th Brigade advanced in the sector north of the Vesdre, throwing out a detachment to mask Fort Chaudfontaine. Stiff fighting took place at Romsée, which was carried with the help of artillery, and the

infantry pushed forward to the outskirts of Liège, only to be withdrawn later under heavy fire from the forts, to a position south of Fort Fléron.

West of the Meuse, the 34th Brigade commenced its march south from Hermée, against Forts Liers and Pontisse. The infantry fought their way in the darkness through the interval between the forts, and by dawn on the 6th was deeply engaged in the streets of Herstal; some detachments even penetrated into the city itself, and reached the headquarters of the fortress commandant, General Leman, before they were set upon and dispersed. Meanwhile the main body of the 34th Brigade, driven out of Herstal, and exposed to fire from the fortress guns, were retiring northwards—a withdrawal which only ended on the far side of the Meuse, north of Visé.

East of that river the 27th Brigade, slipping along the river bank, met with strong resistance west of Fort Barchon; its units became much scattered in the darkness and lost heavily, and only in the first hours of the morning could a concerted attempt be made to carry the enemy's defences. Despite the success of this operation, the brigade commander, considering his troops incapable of further effort, led them back past Fort Barchon to their bivouac, south of Visé.

The civil population co-operated with the Belgian troops in this sector of the battlefield.

The 14th Brigade assembled at midnight of August 5th-6th west of Hervé, with orders to advance north of Fort Fléron direct on Liège. Two companies were pushed out to the flanks to mask that fort and two towards Fort Evegnée; the main body advanced into the interval between these forts, clearing the houses and villages before them, despite the resistance of their defenders. The advance guard was finally held up at the west edge of Liéry; the brigade commander, marching at the head of his men, was killed and the advance of the main body, left without orders, threatened to come to a standstill. Fortunately General Ludendorff, of Von Emmich's staff, who was with the brigade, hurried to the front, took over the command, and resumed the march. The Belgian defenders were by his orders enveloped on both sides and forced to retreat; but the fight was resumed at the next village, which was only stormed after sunrise, after a bombardment by the artillery accompanying the brigade. After a short rest the advance was continued; the artillery came into action against the Fort of La Chartreuse, while the infantry pushed on, without meeting any resistance, to the outskirts of the city. About 2 p.m., when General Von Emmich and his staff came up with the brigade, white flags appeared on the roofs of the houses; officers' patrols reported the city clear of the enemy up to the river. As a *parlementaire*, despatched to the fortress commandant with a summons to surrender, returned at 7 p.m. with a refusal, the bombardment of the city was therefore resumed and continued all night. La Chartreuse was occupied, as also the four main bridges on the Meuse, by parties of German infantry. None the less the position of the 14th Brigade, which alone had penetrated past the forts and stood isolated with its 1,500 men inside the

enemy's lines, was by no means a comfortable one; but the Belgians had been demoralised by the rapidity and daring of the German advance, and were in no condition to take advantage of the situation.

General Von Emmich, after consultation with Ludendorff, decided on the morning of the 7th, despite the absence of news from the other frontiers and the obscurity of the position, to enter the city. At 6 a.m. the main column of the 14th Brigade, covered by advance and flank guards, entered the streets, crossed the main bridge, and occupied the whole of the city. The garrison of the citadel laid down its arms; the German flag was hoisted in the tower and Von Emmich took up his quarters in the building. At the news of the taking of the city, two other brigades—first the 11th, on the evening of the 7th; and next morning, the 27th—entered to reinforce the garrison. By midday on the 8th three brigades were thus at Von Emmich's immediate disposal; and the German official communiqué was able to inform the world "The fortress of Liège has been captured."

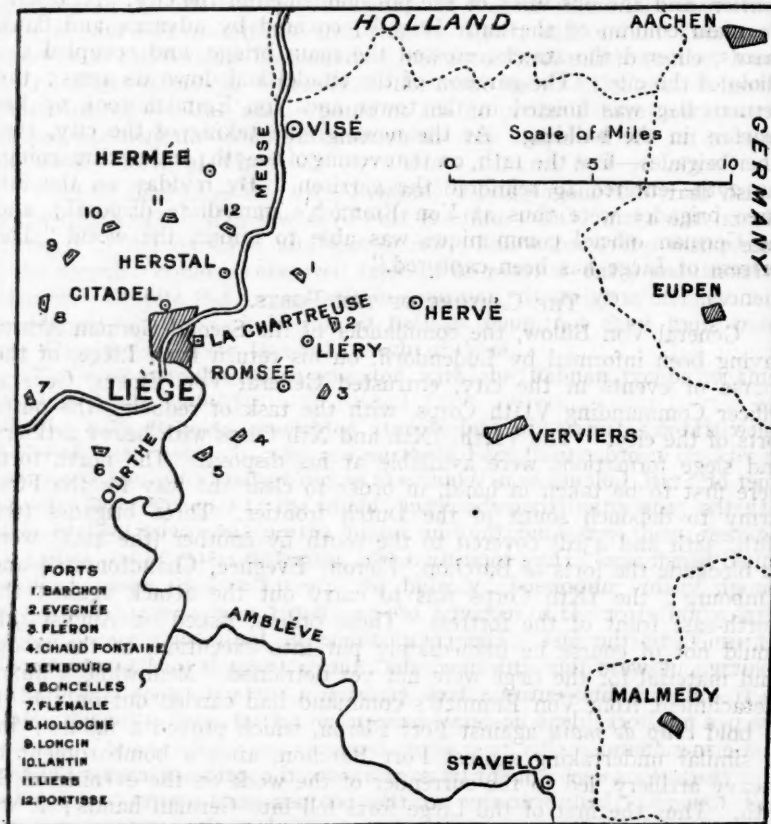
THE CAPTURE OF THE FORTS.

General Von Bülow, the commander of the Second German Army, having been informed by Ludendorff, on his return from Liège, of the course of events in the city, entrusted General Von Einem, General Officer Commanding VIIth Corps, with the task of reducing the outer forts of the city. The VIIth, IXth and Xth Corps with heavy artillery and siege formations were available at his disposal. The north forts were first to be taken in hand, in order to clear the way for the First Army to debouch south of the Dutch frontier. Three brigades (the 28th, 38th and 43rd) covered to the south by another (the 40th) were to blockade the forts of Barchon, Fléron, Evegnée, Chaudfontaine and Embourg; the IXth Corps was to carry out the attack against the north-east front of the fortress. These orders, issued on August 9th, could not of course be immediately put into execution, as the troops and material for the siege were not yet detrained. Meanwhile a mixed detachment from Von Emmich's command had carried out on the 7th a bold *coup de main* against Fort Fléron, which proved a failure; but a similar undertaking against Fort Barchon, after a bombardment by heavy artillery, led to the surrender of the work on the evening of the 8th. Thus the first of the Liège forts fell into German hands; it was soon followed by Fort Evegnée, which surrendered on the 11th, after two days' bombardment by Von Emmich's artillery.

By this day, all preparations being completed, the attack on the remaining forts from the outer side was initiated by the IXth Corps, under General Von Quast, which was ordered to take the Forts of Fléron, Pontisse and Liers, and thus free the northern roads for an advance beyond the Meuse, between the city and the Dutch frontier. A large force of heavy and siege artillery was allotted to this task. To the south of the IXth, the VIIth Corps was to advance against Forts Embourg and Chaudfontaine, while the Xth Corps was to secure their left, between the Ourthe and the Meuse. Von Emmich's corps was

meanwhile to deal with the Forts of Lantin, Loncin, Hollogne and Flémalle, west of the Meuse, as soon as sufficient heavy artillery could be made available.

Fire was opened on the 12th, by the IXth Corps, against Forts Pontisse and Liers; by the VIIth, against Chaudfontaine. The Xth



Corps pushed forward to the Ourthe, and sent patrols towards Fort Boncelles. On the morning of the 13th, after four hours' bombardment by siege artillery, Fort Pontisse hoisted the white flag; it had been completely shattered by the rain of heavy shells poured upon it and was in no condition to offer further resistance. Early on the 14th Fort Fléron, which had been left the previous evening with only one gun in action, yielded to the first shots from a newly arrived 42 cm. siege battery; its framework had been blown to fragments, its guns and turrets destroyed, and most of the garrison killed before the commander would surrender.

Meanwhile, on the 13th, the VIIth Corps had occupied the Fort of Chaudfontaine, which was almost entirely destroyed by an internal explosion, and Embourg, compelled to yield before the threat of an infantry assault, following on an eight hours' bombardment.

Owing to the rapid fall of the eastern forts it was now possible to equip Von Emmich's corps with sufficient heavy artillery to permit of its undertaking the attack of the forts on the west bank of the Meuse. Units of the Xth Corps and a division of the VIIth Corps were ordered to assist in these operations. The first of the western forts, that of Liers, had already, on the morning of the 14th, fallen into the hands of the IXth Corps. By the evening fire had been opened against Fort Lantin by Von Emmich's artillery; the bombardment of Loncin, as also that of Hollogne and Flémalle, by the VIIth Corps, commenced only on the 15th. Other units of the IXth and Xth Corps had meanwhile pushed forward well to the west of the forts and cut off their garrisons from the outer world. Fort Boncelles, last of the eastern defences, fell early on the morning of the 15th. The bombardment of the western forts continued all that day. At 5.15 p.m. Fort Loncin blew up with a terrific explosion; most of the garrison perished; General Leman, the commandant of Liège, was discovered senseless in the ruins and carried into captivity. Fort Lantin, crushed under the weight of concentrated artillery fire, had already surrendered shortly before noon. At 7 p.m., in order to avoid further useless sacrifice of life, Von Einem's Chief of Staff, Colonel Von Wolff, sent a *parlementaire* to Fort Hollogne, with the proposition that an officer should be sent to view the ruins of the destroyed forts, and that he might realise the uselessness of continued resistance. The proposition was agreed to; the officer, however, though visibly impressed by what he saw, insisted on seeing General Leman and from him received orders that the resistance was to be continued to the last. The commanders of both the two forts still holding out were then informed that the German bombardment would be resumed, failing entire surrender, at 6 a.m. next morning the 16th. By 9 a.m. Fort Flémalle, and half-an-hour later Fort Hollogne, were in German hands.

Thus the great ring fortress of Liège, the pride of every Belgian, had fallen. Thanks, firstly, to the boldness and enterprise of Von Emmich and his brave troops, and, secondly, to the irresistible power and accuracy of the German heavy and siege artillery, the twelve modern armoured forts had been forced to surrender in ten days—a feat unexampled in all military history. But the Germans had no time to spend in self-congratulation, for every day was of importance for the success of their great strategic plan, of which the capture of Liège was but the prelude. Von Einem's force was rapidly redistributed to its former units; the 13th Reserve Division came into the city as a garrison, and the tide of invasion, now gaining full momentum with the removal of the most formidable obstacle to its progress rolled forward over Belgium into France.

THE PASSING OF THE VOLUNTEER FORCE.

By COLONEL F. S. BOWRING, C.B., R.E., Retired.

NEW events of importance, these days, crowd in so rapidly, the one upon the other, and our thoughts are taken up with the affairs of the moment; before it is too late to recall some that are slipping past, it is well we take note of the "what-might-have-been," or the "how-not-to-do-it," for future guidance, among them, the late Volunteer movement.

Every endeavour is now being made to return to peace conditions as hastily as possible; too hastily, many believe, to be consistent with national safety. But while admitting the absolute necessity for so doing to re-establish national finance upon a sound basis, it would be regrettable in the extreme were we to forget the lessons, or some of them, learnt in building up the fighting machine which finally brought the Great War to a successful issue.

There is no denying the fact that had prompt and proper measures been taken in the autumn of 1914 to meet the military eventualities, towards which the nation was inevitably drifting, vast expenditure would have been saved, and the end more rapidly attained.

At the outset, when war was forced upon the country by Germany, the manhood of the nation, with but few exceptions, placed itself at the disposal of the Government.

Recall, for instance, the desire of thousands, who had never before borne arms, and who had never dreamt of being required during their lives, to serve their country for military purposes. As if by a common flash of patriotic instinct, within a few hours of the declaration of war on August 4th, 1914, thousands of men, in all positions of civil life, determined to take some share with the nation militant as Regulars or Volunteers.

So strong was their insistence, there appeared to be possibilities of its becoming a danger, were these large bodies of men left without control or Government sanction. Something had to be done, and that quickly, to place this rapidly growing man-power, arming to defend hearth and home, under some form of discipline and organization. In all parts of the country, hundreds, nay, thousands, of detached groups of civilians banded together to become military efficient for home defence.

The first step was to try and obtain cohesion among the various groups, approximating to platoons, companies, or battalions of fighting men. Then followed the formation of a central guiding authority, the V.T.C. (Volunteer Training Corps), with headquarters at the Law Courts, Lord Desborough becoming President and General Sir O'Moore Creagh, V.C., Military Adviser, and the various scattered units readily agreed to come under the orders of this Central Association.

In November, 1914, the Central Association V.T.C. received *conditional recognition* by the War Office, and was directed to carry on the training of the Volunteers, with the following reservations:—

1. Only men not eligible through age to serve in the Regular or Territorial Army were to be admitted as members of that force, although men of military age, which was then up to forty, might be allowed to learn their drill.

2. No arms, ammunition, or clothing would be supplied from public sources.

3. Badges of rank and dress were to be distinct from the Regulars

4. A distinguishing badge with the letters "G.R." was to be worn by the men, but *only* when on parade.

5. No accepted military ranks were to be allowed.

These restrictions were most disheartening to the men and resulted in many cutting their names. The Volunteers were, however, not to be put off by this cold douche, and struggled on to make themselves as efficient as circumstances would permit, in the hope of eventually obtaining a more generous meed of recognition.

The various corps set to work to provide themselves with uniforms, equipment, rifles, ranges, drill halls, and drill instructors, at considerable expense.

The Central Association started instructional classes for officers and N.C.O.'s, and issued orders as to training, discipline, and so on, taking upon itself the duties of a War Office.

It is not easy to find excuses for the War Office failing to rise to the occasion, except it be that the enormous strain of work imposed upon it by the sudden call to organize, equip and mobilize the rapidly expanding first-line forces, and transport them to the many war zones, left no time to deliberate and issue instructions on novel forms of military expansion. Non-commitment or limiting conditions was the attitude adopted by the War Office. An excellent military maxim is extreme caution when advancing over uncharted terrain, if time is not all important, but when decisions have to be come to at once, risks have to be taken, and bold steps made in place of halting ones.

As the War progressed it became apparent that, if the Allied Powers were to avoid defeat, every available source of man-power would have to be made use of. The War Office by slow degrees saw the wisdom of removing the hampering restrictions placed upon the Volunteers, and brought them under the direct orders of the various Commands for training and discipline, and the County Territorial Associations for equipment and finance. In fact, the Volunteers replaced the Territorials as a home defence force, the whole of this force having been sent out of the country on foreign service.

The Volunteers were then fully equipped, trained and organized on lines similar to those of the Regular Army, and officers of the Regular forces were told off to carry out inspections. The result was the formation

of a large force ready to take its place in the defence of the country, should the emergency arise.

The Commander-in-Chief of the Home Forces, Lord French, carried out a succession of inspections, county by county, the corps being assembled at convenient centres for that purpose, and on all occasions expressed himself well satisfied with what he had seen of them, their discipline and training.

The writer, who on many occasions during his military career has had opportunities of witnessing parades of Regulars, Militia and Volunteers under the old regime, can confidently assert that when the Volunteers of his county were thus inspected, the troops passing the saluting point represented a standard of efficiency and training that would do credit to a second-line force of any nationality.

Step by step the Volunteers were ordered to take up duties hitherto performed by the Regulars, such as the East Coast defences, the anti-aircraft defence, the defence of railways, bridges, etc. At last, in May, 1918, when our Western Front was being sorely pressed and required immediately reinforcement by every available Regular, they were requested to furnish a considerable force of whole-time men, to replace regular units hastily sent across to France.

Thus, notwithstanding the short-sighted policy of the Government, tardy recognition, absolute discouragement of the splendid spirit displayed, and in spite of disheartening neglect, difficult to pardon and not easy to forget, these patriotic Volunteers ended by becoming a well trained force of between 300,000 and 400,000 men, recognized as part of the National Army. Since the Armistice each member has received a gracious letter from the King, acknowledging and thanking him for his services, allowing the officers to retain their rank, wear their uniform on public occasions, and the rank and file to return to civil life and employment.

The writer, who assisted in organizing the Volunteers from the goose-step days, and who was subsequently Commandant of five battalions in one of the Home Counties, often heard it said, "Never again will we volunteer, so ungraciously were we treated at the start." Such threats are but passing fits of ill-humour, and need not be taken too seriously. The men will as readily come forward again if required. But what have we learnt from past experience, and how should a Volunteer force of the future be treated? Without going into details, such a force, if called into being, should find itself, at the *start*, in the position the Volunteers of 1914 were placed at the *end* of the War—that is to say, fully armed, equipped and organized as are the Territorials, and, while on parade or ordered for duty, under military discipline. The duty of drawing up the required regulations to ensure this must be left to the War Office, and it is to be hoped that the military authorities now dealing with the organization of the forces will draft them. A few suggestions may be permitted.

1. A register of demobilized officers and N.C.O.'s willing to assist in the training and organization of Volunteers.

2. Areas mapped out, within which battalions of 1,000 men will be formed, and headquarters, drill halls and ranges marked down. These areas would be based upon past experience of numbers enrolled.

3. A reserve of arms, equipment, and clothing to be kept at the Territorial centres of instruction throughout the country, for immediate issue.

In conclusion, we will attempt to estimate the number of Volunteers to be equipped and provided for. The county with which the writer was best acquainted, during the early days of the movement, could have mustered between 9,000 and 10,000 Volunteers. This number certainly fell off as time wore on, due to preventable causes which need not occur again, but if applied proportionally to the United Kingdom, between 400,000 and 500,000 Volunteers may be anticipated.

In the provision of a reserve of arms, uniforms and equipment for this number will be the chief outlay the nation will be called upon to meet. Demobilization will be bringing into store many thousands of such outfits in serviceable condition, which could be made available, so that the initial outlay need not be heavy. The upkeep of clothing will require consideration, but if half the uniforms were stored ready made, and cloth for the rest kept in hand, this would meet the case. While if annually a certain proportion of these were issued to the Territorials and replaced by new, deterioration would be avoided as well as waste of money.

If, as seems probable, service conditions in the Territorials are to be considerably hardened—very necessary, too, if efficiency is to be assured—there will remain thousands of men who, although willing, are unable to give sufficient time to train for that force. It is from this class of patriotic citizen that the Volunteers may be expected to come when the country has need of them.

Some day, it is hoped, a history of the Volunteer Force will be written, when to those not familiar with its inner workings it will be a revelation to learn the extent of personal sacrifice both in means and time made by its members.

January, 1920.

Since the foregoing was written, Mr. Churchill, the War Secretary, has explained to the Territorial County Associations the scheme for the reorganization of the Territorial "Army," as it is now to be called.

It is to be for purposes of Imperial defence, that is, service outside these islands; age seventeen to thirty-seven, and far more stringent conditions than formerly to qualify for allowances. Within a month of being embodied by Act of Parliament, they are to be ready for active service.

By whom, it will be asked, are the home defences of the country to be taken over in the absence of the Territorial Army? If Volunteers, raised on the spur of the moment, it is hoped they will be treated in a very different manner to those who came forward in 1914.

LESSONS OF THE WAR.

A FRENCH ADMIRAL'S VIEWS.¹

By LIEUTENANT C. F. JEPSON, R.N.

IN presenting Admiral Daveluy's opinions in a condensed form I have tried to lose as little as possible of their meaning and value. One or two purely French problems, which, it is thought, are of no interest to foreigners, have not been reviewed. Beyond a few prefatory remarks I have abstained from criticising, after the manner of newspaper experts, the work of a well-known officer. Probably some of the author's conclusions will be challenged by students of naval warfare. The book is obviously more a popular work, designed to instruct public opinion, than a treatise on strategy, and it is admittedly a book of generalisations; but it is rare to find a naval officer voicing his opinions in public print, and they become all the more interesting when stated dispassionately by a discerning foreigner.

* * * * *

Character of the War.—The War was of a disconcerting character. Material which had been prepared at huge cost was not used, and new material had to be created—a situation unprecedented in history. Germany least of all had had real confidence in submarines, yet it was submarines that reversed the order of things. Battleships had to play a preventive rôle only; history was repeated in the arming of merchant ships and the lining of the shores of France with small forts. The weapons of warfare had changed but not the principles. The sea is first and foremost a line of communication, to be wrestled for by belligerents. Up to the first months of 1915 the war was one of commerce; unbroken save by a few minor operations undertaken to give satisfaction to public demands. The Allies were clearing the seas of German commerce and commerce-destroyers, and the Germans were trying to cut lines of communication.

The second phase saw Germany, her cruisers sunk, resort to increased use of submarines, while the Allies replied by barricading their main harbours and launching a swarm of small craft. The second phase was unfavourable to the Allies because it took them a long time to find weapons with which to combat the submarine employed in an inhuman manner. The total tonnage sunk by submarines was fourteen millions, and we cannot be said, although the newspapers affirmed it, to have had complete

¹ "Les Enseignements Maritimes de la Guerre Anti-Germanique" Contre-Amiral Daveluy, Paris, 1919.

sovereignty of the seas while the submarine menace was at its worst. Nevertheless, it was when the menace was strongest that the American armies and their entire equipment crossed the sea in security. It is curious to note that the general public only began to realise the value of our navies when the latter had received some checks.

How might we have drawn greater benefits from our maritime superiority, and what shall France's future naval forces be? There are those who say that the submarine was the most successful engine of the war and that it should be the sole man-of-war of the future; but the surface vessel won the war, not the submarine. The nation which has an all-submarine navy will doubtless be able to inflict huge commerce losses, but will not herself possess the right of way of the sea. Why did the submarine fail to gain liberty at sea for Germany? Because its power is so very limited. It has the one great quality of invisibility, and but little more. It is slow, vulnerable on the surface, and requires selected conditions for its attack. How many times have ships passed safely by submarines because they were not in a favourable position for attacking? It is useless for commerce protection.

The fleet of the future must comprise surface craft and submarines, and, by examining the behaviour of all kinds of surface craft and submarines, we can gain an idea as to which types should survive.

The Future of the Battleship.—What was expected of battleships? They were expected to keep the sea and finally to overcome, at the least by numerical superiority, the enemy's battle fleet. They were unable to keep the sea. Mines and submarines restricted them to short and carefully planned cruises. Had there been a force of capital ships able to keep the sea, the great submarine campaign would never have begun, because a close blockade of German ports by our myriad small craft, backed by immediate support, would have nipped it in the bud.

Yet the Grand Fleet, even when lying at its base, made its power felt. It enabled England to surround her coasts with anti-submarine patrols which the Germans could not dislodge with submarines, and dared not attack with surface craft. The Grand Fleet, ever vigilant, was the great covering force of Allied commerce all over the world.

The German battle fleet even less fulfilled its mission than did those of the Allies. Held in check, it of itself could not oppose any of our operations, and, even after a tactical success, was obliged to run for harbour. Germany's position would have been better had she had no battle fleet, but had invested a corresponding sum of money in submarines.

We may conclude, therefore, that a nation which intends to dispute the control of the seas must have a force of surface capital ships, while a nation which foresees a defensive campaign will do well to place all her resources in submarines. A new type of battleship is required. The present-day "Dreadnoughts," direct descendants of three-deckers, are entirely built for the purpose of delivering and withstanding attack by gun-fire. Their vitals are at the mercy of mines and torpedoes, and they have no weapon with which to reach a submerged attacking vessel.

Their present security above the water-line must to some degree be sacrificed to greater protection below. Their great draught renders it extremely difficult to localise the effect of an under-water penetration. It is probable that the future type will be heavily armoured, but the real problem, and it is a very difficult one, is the reduction of draught.

Enormous ships are the outcome of rivalry between the first-class maritime powers, and it remains to be seen whether England and the United States will engage in a competition to outbuild each other. But it is not yet proven that a mammoth ship is better than two or three moderate ones.

We may be quite sure that the modern capital ship will be furnished with weapons against submerged approach, possibly in the shape of a number of light howitzers to throw plunging shells. Controlled from a kite-balloon (which every big ship will tow in the future), these howitzers would, on the detection of submerged approach, cover the sea in all directions with a rain of shells. As for "Dreadnoughts," their day is done.

The Necessity of Light Cruisers.—Light cruisers and submarines took the most active part in the war. The former were in great demand and had to fulfil many rôles. Even England, who possessed many, was nevertheless better off for battleships than light cruisers, and, had she been able to exchange some of her "Dreadnoughts" for light cruisers, would still have found unceasing work for them; Germany felt the need of light cruisers; Italy, on her entry into the conflict, was careful to ask England for the services of four; as for France, she had none, and could not, therefore, assist to clear the seas of commerce-destroyers.

How did France come to "commit the gross blunder" of leaving herself without light cruisers? By the close of the Nineteenth Century French naval experts had made a close study of scouting, which, they considered, was the whole and sole duty of a cruiser. Basing their opinions on fleet manœuvres, they came to the conclusion that the future naval action would take place in the following manner: The opposing battle fleets would put to sea in search of each other preceded by their respective cruiser arcs. When the arcs met, a cruiser action would ensue. The side with the more heavily armed cruisers would win and these would then be able to push on and gain exact knowledge of the enemy's battle fleet strength and disposition.

France accordingly invented and built the armoured cruiser. Other nations for a time imitated her, but soon abandoned this type of vessel. Not so France; with maternal pride she clung to her armoured cruisers, maintaining that a vessel must be of at least 8,000 tons displacement if she is to keep her speed in all weathers. In other words, the light cruiser was condemned out of hand because it falls short of that absolute perfection which is beyond human attainment. In vain did a section of French officers, of whom the author was one, protest that war differs from manœuvres; that the varying circumstances of the one demand a flexibility which cannot be deduced from the formal pitched battles

of the other ; and that the supreme virtues of a cruiser force are adroit handling and a right use of high speed. Apart from its functions with the battle fleet, the light cruiser can perform many others for which an armoured cruiser is unfitted. Their warning fell on deaf ears, and the war found France using, in place of light cruisers, vessels which came to be called by their crews " target ships."

Light cruisers were no more immune than battleships from losses due to submarines and mines, but they had to keep the sea. No better proof can be found of the value of this type of vessel. They too must be transformed to meet submerged attacks, and it is desirable that their draught be reduced ; perhaps we shall see a radical change in this direction. During the war destroyers were compelled to undertake work proper to light cruisers. There must be more light cruisers, many more ; there will always be plenty of work for them, both those of 4,000 to 5,000 tons and the smaller types.

The Disappearance of the Surface Torpedo Craft.—By the end of hostilities the total number of torpedo craft engaged had become enormous, and all were hard worked. Thus it comes about that there are some impressionable people, even seamen, who think that more attention should be paid to the development of destroyer flotillas. Yet the destroyer was employed upon every service into which it could be pressed except that for which it was designed ; how much more efficiently could it have dealt with the submarine menace had it been originally furnished with the weapons and endurance to do so. It was not until Jutland that destroyers ever had a chance to perform their grand rôle, and then they were baulked ; Jutland was a play without a second act.

Destroyers will be replaced by vessels in which the torpedo will only be a secondary arm. Instead of carrying six, eight, or even ten tubes they will only carry two, they will have two or three 6-inch guns, and a special depth-charge armament. By reducing their speed to that of the flotilla leaders (" Arethusa " class), which always supported them in fleet movements, they may be given increased endurance and seaworthiness. The degree of efficiency of the submarine torpedo craft relegates the surface torpedo craft to the rear rank.

The Success of the Submarine.—Before the war all the principal navies were interested in the future of submarines, but it was not until the " Aboukir "—" Cressy "—" Hogue " incident that the eyes of both sides were really opened to their possibilities. The influence of the submarine dominated the war ; the story of the submarine is the story of the war in European waters. Yet it is the weapon *par excellence* of the weaker belligerent. Allied submarines, by the very fact of belonging to the stronger side, were denied the chance of achieving as much as they might have done ; the Allies would have won the war even had they possessed no submarines, but, had Germany possessed none, the war at sea would not have lasted a year.

There was a lamentable lack of foresight in countering the submarine campaign. The Allies seemed to rest content with parrying each

successive development when it had materialised, instead of anticipating it, which is the essence of strategy. France made grave mistakes in under-rating the radius of activity of submarines, and in arming merchant ships with guns of too small calibre, mounted prominently, so that her ships became conspicuous in the days when neutrals were still respected. The correct answer to the German declaration of prohibited zones was the convoy system. Its inception rendered the arming of merchant ships superfluous.

Anti-submarine weapons may be divided into two classes : those which are local or limited in their employ, and those which are universal. Mines, nets, aircraft, guns, are of the former class, and, while they do contribute towards the suppression of submarines, it is useless to rely wholly on them. Depth charges and mortars are of the latter class and no vessel should be without them. Every anti-submarine patrol boat of the future must be a small "mystery ship," indistinguishable from a merchant coaster. Sound-detection will one day be the means whereby submarines will be as surely tracked down as a criminal by a bloodhound, and that day will see them reduced to the level of every other kind of ship, that is, they will be invulnerable only in the presence of inferior force.

Steam-driven submarines stand condemned ; they cannot dive quickly enough. France's boats were useless to her war policy because they possessed only defensive qualities.

Submarine navigation has certainly made great strides, and in the future we shall see submarines in the advanced cruiser arc, but not yet do they possess all the qualities of above-water craft ; they cannot, therefore, displace them entirely. Those distinguished persons who insist that the future fleet should be all-submarine should remember that the war was not a fair test, firstly, because the submarine took us unawares, and secondly, because the world-wide nature of the war afforded it exceptional scope. Finally, it must be repeated that the Power which places all her faith in submarines limits herself to the policy of merely opposing the offensive operations initiated by her enemies.

The War on Commerce.—In laying down a plan of campaign against England, foreign Powers have always made the destruction of her commerce their ultimate object. This was, unlike other ones, a reciprocal war of commerce. Germany sought to diminish beyond the minimum the imports on which her island foe subsisted, while the Allies swept Germany's commerce from the seas and tried to deprive her of food and material which she could only obtain by sea. Notwithstanding the difficulty of seizing contraband which was carried in neutral bottoms between neutral ports (theoretically not contraband at all), the Allies are estimated to have held up eighty per cent. of the contraband of war.

It is elementary truth that *guerre de course* (by surface ships) cannot seriously trouble England so long as she is mistress of the seas ; nevertheless, it is once more proved that it creates a serious diversion, and it took many squadrons to round up the comparatively few German

commerce destroyers—in fact, in November, 1914, we employed no less than seventy ships in this task. And how much greater would have been our difficulties if Germany had possessed some dockyards abroad. The development of wireless telegraphy will greatly hamper commerce destruction in the future, as far as surface commerce destroyers are concerned, so that it would seem that surface vessels should only be deliberately employed for pure commerce destruction when, owing to their being cut off from support, there remains no other useful rôle for them to play.

Two special circumstances greatly enhanced Germany's success with *guerre de course*: (1) The war was almost world wide; (2) She had trampled under foot the rights of neutrals. These two conditions permitted her to sink at sight any vessel on the seas and they facilitated her submarine operations to a degree which is unlikely to prevail again. That is to say, sinking without hailing is unlikely to be a general condition of sea warfare again. The basis of commerce protection should therefore be the arming of merchant ships, but without neglecting every other anti-submarine device. But in areas where a submarine may presume any vessel met with to be an enemy vessel, the convoy system is preferable, the escort being provided by special anti-submarine vessels. These two methods of defence must not be rigidly adhered to; they will vary with the future offensive and defensive qualities of the submarine.

Another special feature of the war was the dilemma of the neutrals. They could not do without British coal or American foodstuffs and so were obliged to preserve economic relations with the Allies and America. Having no power of defence they saw their commerce worse off than that of the Allies. This proves that every country should have a navy capable of assuring its economical integrity—even Switzerland!

Coastal Attack and Defence.—The mere coastal raid which has no military object is too futile to merit discussion. It is difficult to assess the full value of the continuous bombardment of the Belgian coast, but at least it provided a diversion while the land forces were operating.

The Dardanelles might possibly have been forced had not some of the prime rules of strategy been transgressed. There ought to have been one combined naval, aerial and military attack, and it should have been based largely on the element of surprise. The landings were made at places which were especially strongly held by the enemy. The "River Clyde" incident is worthy of mention as a novel and "surprise" method of landing troops.

The Dardanelles campaign illustrates once again the fact that, in a duel between forts and ships equally gunned, the latter are at a disadvantage as soon as they approach the former to such an extent that they encounter minefields and become subject to cross-fire. One or two lucky hits may completely disable a ship, but a fort is not out of action until every gun is accounted for.

No matter what the distance to be traversed by the attackers, the coastal bombardments of the future will be aerial, and, if the aircraft

cannot proceed direct to their objective, they will be carried in ships. In future France's coast defences will be in the hands of the Ministry of Marine.

The Use of Mines.—Germany's gigantic efforts in world-wide mine-laying did not repay her to any great extent and were only just worth while. We shall be better able to deal with mines in the future. Men-of-war will be provided with gear to protect them against explosives, and convoys will be screened by high-speed mine-sweepers. The best port mine-sweeper would seem to be a light-draught paddle-boat.

The Co-operation of Aircraft with the Navy.—Seaplanes have proved their worth in connection with a variety of naval undertakings such as the registration of gunfire, the examination service, mine-sweeping, submarine-hunting, and, above all, extending the radius of utility of scouting cruisers. The employment of specially designed seaplane carriers, though useful in certain cases, such as bombardments, is not the last word on the subject of seaplane transport. That will be reached by inventing flying boats which are capable of folding their wings like a bird. Every ship would then be able to carry a number, and special seaplane carriers would be superfluous. Flying-off platforms should give place to apparatus combining a wire stretched above and a rail running underneath the flying boat. Being seaworthy, the flying boat would, on its return from a flight, be hoisted in from the water.

Dirigible airships were of no value as bombers once the incendiary shell had come into use, but, for reconnaissance and scouting, the Zeppelin has a great future. All species of aircraft can be used for mail and commercial services in peace time, and they should be ready for rapid conversion to war uses.

France's Future Navy.—It is to be feared, owing to the heavy cost of the war and the unlikelihood of another in the immediate future, that France must rest content with a second-class navy for some years. It ought, however, to be planned with a view to constituting it a part of the combined allied fleet of the future. France and her Allies can look forward to naval supremacy; her fleet should not, therefore, be an all-submarine one, but one which, besides being complementary to those of her Allies, will form the nucleus round which, in the days of prosperity to come, shall grow up her first-class navy.

Steam must give way to internal combustion engines; smoke is a very great obstacle to invisibility; rapidity of fuelling and the protection of magazines will be greatly ameliorated when the change takes place.

Some attention should be paid to the possibility of camouflaging all men-of-war which carry out their usual duties singly, that is, not grouped in squadrons. It should be made difficult to distinguish such ships from merchantmen until they are close up.

Speed is highly important; Jutland shows us that before, during, and after an action, maximum speed is maintained; but speed is subsidiary to hitting power.

The merchant fleet is but a part of the national navy in war time. Let it be designed, built, officered, and controlled with that fact in view. Commercial ports should be on an analogous footing.

THE BRIGADE KRAEWEL ON SEPTEMBER 8th-9th, 1914.

Extracted from the "Militär Wochenblatt" of December 18th-20th, 1919.

Reference— $\frac{1}{80,000}$ Map of France, Sheet 49-Meaux.

INTRODUCTORY NOTE.

DURING the battle of the Marne the B.E.F. was opposed by the German Guard, 2nd, 5th, and 9th Cavalry Divisions (each with its complement of two or three Jäger battalions), supported by the 5th Division of the IIIrd Corps and Kraewel's composite brigade from the IXth Corps. In the following article the operations of this brigade are described by its commander. The country in which the action of Montreuil was fought is very broken and freely covered with dense woods. The times in the narrative are German, which were one hour ahead of the British.

After the combat of Esternay on the Grand Morin, which had taken place on September 6th, 1914, the 9th Army Corps commenced its march to the north on September 7th.¹ The 34th Infantry Brigade, forming part of the 17th Division, moved by Montmiral to Gillauche, where it bivouaced that night. The march was resumed early on the morning of the 8th by Viffort and Chateau Thierry, in the direction of Neuilly St. Front. The commander of the brigade, Major-General von Kraewel, was in charge of the main body of the division. At noon the division made a long halt half way between Monthiers and Bonnes, and during this halt Major-General von Kraewel received the following order by 1.45 p.m. :—

"Belle Vue, September 8th, 1.10 p.m.

"CORPS ORDER.

"1. Hostile columns reported advancing from Boissy eastward of Coulommiers by Doue on St. Cyr and by Rebais on Orly (on the Petit Morin), also from La Chappelle sur Cracy by La Haute Maison, Pierre Levée.

¹ On September 5th four of Von Kluck's Corps, from east to west the IXth, IIIrd, IVth, and IInd, were advancing southwards between the Marne and Seine, with the IVth Reserve Corps and 4th Cavalry Division in echelon behind the right (west) as flank guard towards Paris. Alarmed by the collision between the flank guard and part of General Maunoury's Sixth Army on the evening of the 5th, Von Kluck sent early on the 6th the IInd, and then the IVth Corps to support it; and on the 7th hurried off the IIIrd and IXth Corps also north-eastwards, covered by rearguards, towards the British in order to settle Maunoury. Thus, by the evening of the 7th he had created a gap of about 25 miles between the right of the German Second Army, which was generally facing south, and the left of the First Army, which was generally facing west. This gap was filled by the troops mentioned in the introductory note.

"2. The IXth Army Corps is ordered to hold the line from La Ferté sous Jouarre to Nogent, both inclusive, and to destroy the Marne bridges if necessary. The 3rd Cavalry Division are ordered to hold the Petit Morin.

"3. The 17th Infantry Division will immediately send the rear Infantry regiment of the main body under the Brigade Commander and one Artillery group with its ammunition column . . . and one company of engineers (if possible on lorries) to Montreuil aux Lions.

"At this point there are already one Infantry Regiment and one Field Artillery group of the 18th Infantry Division. The Brigade Commander will assume command of all these troops and fulfil the task assigned to the IXth Army Corps above. The three Cavalry Divisions may be called upon to co-operate if urgently necessary.

(Signed) "VON QUAST."

The order came as an absolute surprise to the brigade. All thoughts were directed towards the battle, of which all felt the importance and away from which the IXth Army Corps was marching. Now the brigade was entrusted with a task, the execution of which appeared difficult, which severed it from the division and split up the unity of the brigade. The maintenance of such unity was at this time considered of more importance than in the later years of the war. Moreover, at this moment the brigade staff had not got a map which showed the section of the Marne assigned to them. Finally an Infantry officer was found who had a newspaper cutting with a map on the scale of $\frac{1}{800,000}$ showing Montreuil aux Lions.

The Brigade Commander now rode back to the column, assembled the 89th Grenadiers and the 2nd Group of the 60th Field Artillery Regiment and marched with both these units to Montreuil, arriving about 6.45 p.m. Numerous Cavalry transport wagons were met on the road. Montreuil was already occupied by the 84th Regiment and the 2nd Group of the 45th Field Artillery Regiment, both belonging to the 18th Division. The mixed Brigade Kraewel was therefore concentrated, with the exception of the Engineer Company, which never actually joined it.

The Brigade Commander now had to consider the question of the execution of his two tasks—the holding of the line of the Marne from La Ferté to Nogent, and the blowing up of the bridges. It seemed inadvisable at so late an hour to push forward the Infantry to the Marne. It was already 7 p.m. and the troops had had an exhausting day. It would be dark before the detachments had reached the Marne, even at the nearest points, let alone at the more distant ones such as Nogent, and it would be hard for them to find their way without maps in the difficult country. A glance at the map also showed that the winding course of the Marne, *e.g.*, by Méry, would complicate the problem of holding or blocking the river crossings. It was considered, therefore, that the brigade's task of holding the line of the Marne could not be fulfilled by holding the bridges on such a wide front. Moreover, the position of the hostile columns whose advance had been reported in the morning was

not known. Certainly there were now no German Cavalry holding the Petit Morin, and the Cavalry still standing on the line of the Marne were better equipped for the destruction of the bridges than the Brigade Kraewel, which had no engineers with it. It was known that on the evening of September 8th the H.Q. of the 2nd Cavalry Corps lay with the 2nd Cavalry Division in Mont Soutin, and that four-and-a-half Infantry brigades (probably Jägers) held the line of the Marne from St. Jean to Chamigny, part of which had been assigned to the Brigade Kraewel. The position of the other Cavalry Divisions was not known. The situation on which was based the order despatching the brigade to Montreuil had thus considerably altered.

The Brigade Commander therefore decided to hold his brigade concentrated at present and issued orders that the 84th Regiment with the 45th Artillery Group should occupy Montreuil with outposts on the line Porte Ferrée—Bezu. The main line of resistance in the case of hostile attacks was to be behind the heights south and south-east of Montreuil. The 89th Grenadiers and the 60th Artillery Group with the Brigade Staff were to be at La Sablonnière.

The brigade thus stood in occupation of an important road junction on the heights commanding the surrounding country, with the line of advance of the hostile columns who might cross the Marne in its front, and was in a position to act against the British advance offensively or defensively. It was no longer a question of occupying or blocking the river crossings, but rather of a possible defensive action by the whole brigade, in view of which it was important that no units should be detached. This view, which was held on the evening of September 8th, was during the night proved to be correct.

The concentrated position of the brigade at Montreuil was in accordance with the orders of the IInd Cavalry Corps received at 6.30 a.m. on the 9th, that the brigade should be prepared for a hostile advance from La Ferté or Cocherel in accordance with circumstances. (The brigade had meanwhile come under the command of the IInd Cavalry Corps.) It is clear that had the brigade been scattered in detachments along the Marne from La Ferté to Nogent it would certainly not have been in a position to fulfil the task assigned to it of opposing vigorous resistance to the British advance.

The night of September 8th-9th passed quietly. While the 84th Regiment with the 45th Artillery Group deployed on the morning of September 9th on the heights south of Montreuil, the 89th Grenadiers, with the 60th Artillery Group, assembled in a position of readiness at La Sablonnière. At 6.45 a.m. the Brigade Staff rode to the south-western exit of Montreuil to reconnoitre the surrounding country and thence betook itself to L'Hopital farm, where it remained till the evening. At 7.45 a.m. hostile Artillery¹ began to shell the Cavalry transport, which was still standing by Porte Ferrée, but when the 45th Artillery Group

¹ The British force advancing on Montreuil was the advanced guard of the 5th Division: the 14th Infantry Brigade with the 65th (Howitzer) and the 80th Batteries, R.F.A.

opened fire in reply from Hill 189, the English guns turned their attention away from the transport to deal with the German Artillery.

At 9.10 a.m., according to reports received by the Brigade Staff, hostile Artillery was in action near Méry, and Infantry advancing in a northerly direction; and when shortly before 10 a.m. very violent rifle fire was heard just east of Montreuil General von Kraewel brought the 89th Grenadiers and the 60th Artillery Group forward to Haloup. Two batteries of the 45th Artillery Group, which, in the meanwhile, had been endeavouring to find a better position near Haloup, now went back again to Hill 189.

In the difficult country accurate observation was not easy, but the hostile skirmishers continued to advance and it was clear that the main attack was taking place south-east of Montreuil. The 89th Grenadiers therefore received the order to hold themselves in readiness south-east of L'Hopital, west of Bosquets. One battalion of the regiment remained as brigade reserve at L'Hopital farm, where also the 60th Artillery Group unlimbered. At 10.20 a.m. an officer of the 5th Cavalry Division, arriving at L'Hopital, reported that a Horse Artillery battery of his division was in action at a farm to the left of the brigade and that about two brigades of the 5th Cavalry Division were still on the Marne. This latter item of information was considered to be out of date, and as a matter of fact was so, for at this time—10.20 a.m.—the main body of the 5th Cavalry Division probably stood at Marigny, that is, to the left rear of the Brigade Kraewel. About an hour later—11.30 a.m.—the brigade received the aforementioned order of the IInd Cavalry Corps.

Between 10 and 11 a.m. only weak Infantry fire was perceptible from Hill 189, but the Artillery at that point, particularly one battery, were being heavily shelled. The 89th Grenadiers had meanwhile deployed into lines of skirmishes and had gained touch with the 84th Regiment south of the road, about 500 yards south of Bosquets. The 60th Artillery Group stood ready for action at L'Hopital, and the above-mentioned Horse Artillery battery had also been brought up to that point, although, as it was short of ammunition, it did not come into action.

At 11.30 a.m. an order was received from the IInd Cavalry Corps that the enemy advancing from Chamigny and Saacy were to be driven back. Touch was to be obtained with the 5th Cavalry Division at Marigny. All available units of the 2nd Cavalry Division were to be attached to the Brigade Kraewel. Information as to the situation was given to the officer who brought this order, and it was pointed out to him that the situation in front of the brigade was still obscure, and that the time for an advance in the difficult country had not yet come.

By degrees the hostile Artillery fire against Hill 189 increased in intensity; the situation of the 45th Artillery Group became uncomfortable, and one battery was entirely put out of action.¹ The position

¹ Two companies of the 1st Lincolnshire Regiment of the 9th Infantry Brigade, the leading brigade of the 3rd Division, on the right of the 5th, worked up through the woods and shot down the gunners of a battery and the escort at short range. As the Lincolnshire rushed into the battery they were unfortunately fired on by British artillery.

of the Artillery on the hill was nevertheless good, in so far that hostile columns in movement could be taken under direct fire from it, which was possible from no other point owing to the difference in height. No doubt this fact contributed to make the British advance cautious. The enemy now commenced to bombard the 84th Regiment heavily, evidently with the intention of shelling the Germans off the crests rather than clearing them by a direct attack. Soon the whole area from Montreuil to L'Hopital came under fire of heavy Artillery, which was in action here for the first time since Liège, while the hostile troops opposite the 84th were being reinforced. However, at 1.10 p.m. that regiment reported that in its front the fight was going well and no attack had taken place.

At the same time the IIInd Cavalry Corps informed the brigade that two Jäger battalions were placed at its disposal, and would advance from Cocherel against Porte Ferrée. As a matter of fact, the Brigade Staff never got into touch with these two battalions. It was clear from this that fighting was going on around Porte Ferrée on the right flank of the brigade, but nothing could be seen of it. Soon, however, the 45th Artillery Group reported that it was in action with one battery of the British, who were attempting to turn them from the west. The 84th Regiment had also to throw back its right flank.

The position of the 45th Artillery Group on Hill 189 was growing worse as time went on. One battery was entirely out of action, and it became necessary to retire the other two. They came into position again near L'Hopital. The 84th, however, although its situation was not improved by the withdrawal of the Artillery, maintained its original position, and was supported for a period by the fire of the 60th Artillery Group.

About 2 p.m. the rifle fire on the front of the 84th had become violent, and hostile skirmishers were working forward and were endeavouring to envelop the left flank of the brigade. An attack by the British appeared imminent when, at 2.35 p.m., a report was received that the 5th Infantry Division were moving by Ocqueron on Dhuizy. This welcome news aroused in the Brigade Commander the hope that he would at last be able to attack, but in this he was disappointed.

Somewhat later it was reported that hostile Cavalry was advancing from Charly by Villiers. The brigade did not consider that this movement concerned it, but that it was the task of the 5th Cavalry Division to deal with it, although this unit was standing rather far back. The 1st Leib-Hussar Regiment, which had been attached to the brigade shortly before noon, was covering its left flank.

At the same time as the above report there arrived another from the 84th that some companies could no longer hold their ground. The regiment had to be brought back. Hill 189 had to be held at all costs. No immediate support was at hand, but the 5th Infantry Division was known to be approaching. Meanwhile an order from the IIInd Cavalry Corps was received which said that now was the time to attack. This was impossible without the co-operation of the 5th Infantry Division and

no doubt the order was issued under the supposition that this division had advanced farther than it actually had. It must be mentioned in this connection that, despite the fighting round Porte Ferrée and the fact that the whole area round Montreuil was being violently shelled, communication with the IInd Cavalry Corps was maintained throughout, thanks to the exertions of the liaison officers.

Shortly before 3 p.m. an officer of the 19th Cavalry Brigade arrived with the report that the brigade was in position at Cocherel and would attack the hostile rear by Porte Ferrée. Around Montreuil the Infantry action had meanwhile slackened, but the companies on the right flank reported that the enemy was endeavouring to work round them to the east.

At 3.15 p.m. it was established that La Loge was occupied by the enemy, who, however, evacuated it again as the result of a violent bombardment by the 60th Artillery Group. At the same time hostile columns¹ moving by Bézu came under the fire of our howitzers. Also at 3.15 p.m. it was reported that at 2.30 p.m. the head of the 5th Infantry Division was half way between Vendrest and Dhuizy.

At 4 p.m. it was reported that a German skirmishing line was advancing from the north-west against Porte Ferrée—an indication that the position there was taking a more favourable turn. Generally speaking, the situation of the brigade at this moment was good. From the position of the Brigade Staff it could be seen clearly that the 5th Infantry Division was wheeling off from Dhuizy in the direction of Montreuil. The time appeared to have come for the launching of an attack.

The Brigade Commander was now able without anxiety for the 84th to send reinforcements to his right wing, but the 3rd Battalion of the 89th, which was detailed for this purpose, met *en route* skirmishers of the 5th Infantry Division, and therefore returned to its regiment. From this it was clear how far forward the 5th Infantry Division had come; but now came an unwelcome turn in events. Just at the time, when at 6.30 p.m. an officer brought the disturbing report that the British were now marching past the left flank of the brigade on Marigny, it was perceived that the advance of the Infantry of the 5th Division had stopped and that the skirmishing lines were being drawn in. It was thought that this indicated that the division was about to change direction of its advance and move to the south of Marigny, as some time before a liaison officer had reported that the division would move "round to the left." Now, however, it began to march off in a due northerly direction, and General von Kraewel perceived that he could no longer reckon on its co-operation.

In addition to this, about 7.25 p.m., information came in that the 9th Cavalry Division was retiring from Cocherel. For some time no news had been received from the 5th Cavalry Division and it was uncertain whether it still occupied Marigny. Thus the brigade was left alone, and its position was serious, as the British could now turn it on both

¹ The leading troops of the 15th Infantry Brigade apparently.

flanks, without the brigade being in a position to make any counter-move. Of the situation of its neighbours nothing was known, and as the brigade had no orders relieving it of its task, it could not as yet break off action, but had to hold its ground. Fortunately this dangerous position was not realized by the troops themselves.

Finally the tension was relieved by the following order from the 2nd Cavalry Corps:—

“South of Coulombs, 6.50 p.m., September 9th.

“1. English columns are reported advancing farther to the east from Château Thierry on Torcy.

“2. The 2nd Cavalry Division and the attached Jäger battalions are retiring on Coulombs.

“3. The action will not be continued, but will be broken off at the earliest possible moment.

“4. The Brigade Kraewel will come under the orders of the 5th Infantry Division. The 5th Infantry Division will move to the neighbourhood of Gandelu and halt there.

“5. I shall be at first north-west of Dhuizy and move thence north-west to Coulombs.

(Signed) “VON DER MARWITZ.”

Major-General von Kraewel therefore issued the following orders at 7.50 p.m.:—

“The brigade will retire to Gandelu. The brigade of the 45th Artillery Regiment will move first, followed by the brigade of the 60th Regiment and the 89th Grenadiers. The 84th Regiment will break off the action under cover of darkness and retire by Les Glandons—Premont. The 1st Leib-Hussar Regiment will follow the 89th Grenadiers. Brigade H.Q. with the 89th Grenadiers.”

Information about the enemy or about the other German troops was not given, as it was a question of bringing the brigade back by the shortest way and in the most suitable manner. When the order reached the troops it was already dusk. The fighting had practically died down in the sector of the 89th Grenadiers, but was still continuing on Hill 189. The retirement of the Artillery and the 89th Grenadiers was supervised by the Brigade Commander in person at L'Hopital and took place without accident. At 9 p.m. Brigade H.Q. reluctantly left their position at this farm. Also the 84th Regiment succeeded in withdrawing with unexpected ease. The guns of the battery of the 45th Regiment which had been put out of action had to be left behind, despite the efforts of the Infantry to bring them away.

The march of the brigade to Gandelu took place in good order and unmolested by the enemy, and although, when it marched past Marigny at a distance of one and a half miles and a long check took place in the neighbourhood of Premont, some anxiety was felt by the Brigade Staff; the movement of the brigade apparently escaped the notice of the English at Marigny. About midnight September 9th-10th the head of the brigade

reached Gandelu. Shortly afterwards General von Kraewel met the commander of the 5th Infantry Division at the cross roads near Château Brumetz and placed himself at his disposal in accordance with the order of the IInd Cavalry Corps, and was instructed to halt his brigade until the troops of the IInd Army Corps, who were arriving in long columns from the westward, had passed through. So the brigade remained, the men lying dead with exhaustion on the road around Gandelu, till 5 a.m. The march was then resumed in rear of the last troops of the 5th Infantry Division to Neuilly St. Front. Here the advance of British Cavalry from the south-east compelled the brigade to deploy the 89th Grenadiers and one of the heavy batteries which were not at the time under the command of the brigade.

From Neuilly St. Front the brigade marched to Chouy, and there once more met units of the 3rd Division, IInd Army Corps. It then marched by Billy and St. Rémy to Buzancy, where it spent the night of September 10th-11th. Thence it crossed the Aisne at Venizel, and came under the command of the G.O.C. IIIrd Army Corps from September 12th onwards. The latter congratulated it warmly after its heavy exertions of the last few days. It was entrusted with the defence of the plateau of Colomb farm, north-west of Vailly, between the 5th and 6th Infantry Divisions.

The losses of the brigade were on the whole not excessive; when it evacuated Montreuil, it was, with the exception of the battery of the 45th Artillery Regiment, quite intact. It had well fulfilled its task of checking the British advance and was in a position to continue the action on September 10th and might have held up the British again on that day in conjunction with the 5th Infantry Division and the strong Cavalry forces available, especially had the latter been employed dismounted.

This is no biased view, but a logical deduction from the good condition of the troops and the general attitude of the British, who displayed at this time little tactical ability.

By September 10th, however, the battle on the front of the First Army would beyond doubt have been brought to a victorious and perhaps decisive conclusion. Even had the crossing troops on the Marne, the Brigade Kraewel, 5th Infantry Division and Cavalry Corps been entirely destroyed—a disaster by no means inevitable—the decisive victory would still have been gained by the German Armies beyond all question.

"THE EXPEDITION AGAINST THE SUEZ CANAL."

On page 356 of the May issue it is stated in a note that the "Dueidar post was held by a hundred men of the 5th Royal Scots." This is an error and it should have been stated that the post was held by the 5th Royal Scots Fusiliers.—EDITOR.

A GERMAN GENERAL STAFF APPRECIATION OF THE BRITISH ARMY IN 1912.

IN his book, "Die deutsche Generalstab," General von Kuhl gives the appreciation of the British Army made by the German General Staff in 1912. It was as follows :—

"The British Field Army is small, but, man for man, it is socially the equal of our own (*ebenbürtig*). The officers are recruited from the best classes of the country, are active in body, and have a practical education and great personal smartness. Their knowledge of military science and general education are not so good. To compensate for this, however, many of the junior and almost all the senior officers have had experience in small wars. The need of reserve officers to complete the Expeditionary Force is not great, as the war and peace strength of the Regular Army are almost the same; and the commanders thus have good opportunity to become acquainted with their staffs, as well as unit commanders. The British soldier is recruited by voluntary enlistment, and his individual efficiency is high, owing to his long period of service. The majority of the men serve for seven years with the Colours and five years in the Regular Reserve. The discipline is good, although it does not correspond to our ideas. The men of the Regular Reserve are of almost equal value with those serving with the Colours. The armament and equipment of the British Expeditionary Force is, generally speaking, of the best. In the Infantry, the training of each individual man and also of each separate unit up to a battalion is good. Their marching capacity and musketry are good, and in skirmishing they make full use of cover and accidents of ground. Instruction in signalling is of a high standard."

Further extracts from the book are :—

"Manœuvres were not taken full advantage of, and it was generally accepted that at first the British Generals would lack experience in the leading of large bodies under the conditions of a European war. Nevertheless, an improvement in this direction might be expected, since of recent years manœuvres on a larger scale were held. Army manœuvres had taken place since 1909, but the troops seemed to be deficient in both the training and skill needed for open warfare."

"The manner in which the British Expeditionary Force would be employed in a war between Germany and France had been carefully considered by the German General Staff. The chief asset of England to France as an ally lay in the British Fleet, but the support of its Expeditionary Army was, according to the opinion we had formed of its value, not to be under-estimated. We also counted on a 7th Division being formed as rapidly as possible from the Mediterranean garrisons

and sent to the front ; which, in fact, did happen. We thus had to deal with an opponent of sterling value, though numerically weak. We did not think that any considerable amount of troops could be spared from the overseas parts of the British Empire, as strong garrisons would be required in India and the main routes there from England. In our opinion there was also a possibility that a European war in which England was entangled and into which it had thrown its whole reserve, the Expeditionary Force, might result in a general rising of the natives.

" We attached considerable importance to the efforts which were being made to create a national Army that might be employed on the Continent. At first the supporters of this idea wished to introduce a compulsory form of militia-service which would be gradually extended to compulsory service with a few years' active service with the Colours. They succeeded in getting a numerous following in support of this compulsory form of militia-service. In 1912 the German General Staff considered that ' if the Territorial Army, which, at that time, was about 60,000 below its establishment of 320,000, continued to show itself incapable of supplying its needs by voluntary methods, it was possible that some form of compulsory recruiting for the Militia would be introduced. A Militia recruited by compulsory measures would not be in a position to support a Continental ally of England for some months after the outbreak of war.' We considered that the difficulties which would oppose the introduction of compulsory service in England on German lines were great ; nevertheless, the idea was taken into account.

" Dunkirk, Calais, or Boulogne appeared to us to be the probable landing-places for the British Expeditionary Force. The big extensions of the French Channel harbours pointed to the fact that everything was ready to guarantee a rapid and safe disembarkation of the British Force. A landing in Jutland was regarded as quite improbable. The manner in which the British Force was employed on the Continent would always be influenced by the need for keeping up its communications with the ports of disembarkation.

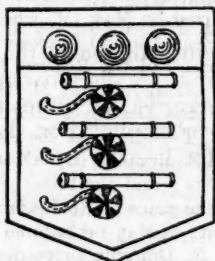
" For a long time there was a strong body of opinion in the German General Staff that the British would think twice before they put their only large reserve, meant chiefly for Colonial purposes, on to the Continent. The French Press also frequently expressed the opinion that, owing to their fear of a German invasion, the British would scarcely dare to send their Regular Army away from England. In the last few years before the war we had, however, no more doubts that we should see the Expeditionary Force by the side of the French Army very soon after the declaration of war.

" According to our own detailed reckoning, it could be mobilized completely by the evening of the tenth day of mobilization. If the concentration at the ports of embarkation began on the morning of the eleventh day, the embarkation could start on the morning of the twelfth day, by which time the transport fleet would probably have finished its preparations. The disembarkation at Dunkirk, Calais and

Boulogne might be carried out by the fourteenth day of mobilization, or by the fifteenth evening if the two Irish Divisions were included, and the latter would have to be relieved by Territorials.

"The general idea which the German General Staff had formed before the war of the British strength was accurate in its main outlines. On one point, however, we made a mistake. British rule in India and Egypt proved itself so powerful that no risings of the natives worth mention took place. England could take from India more troops than we allowed for, and even employ native troops on the European theatre of war.

"Apart from garrison troops in the Colonies, British troops served in France, Macedonia, Palestine, Mesopotamia, and in the German colonies. The demands made by the War in no way corresponded to the peace organization of the British land-forces, and the enormous growth and re-formation of the British Army during the War was an organizing feat of the highest order."



NAVAL NOTES.

GREAT BRITAIN.

The second quarter of 1920, with which the Notes which follow are concerned, was somewhat less eventful than its predecessor, although a number of changes were made in administrative matters connected with the Royal Navy. Further discussions on the Navy Estimates took place in the House of Commons. The First Battle Squadron of the Atlantic Fleet remained in the Eastern Mediterranean and the Black Sea owing to the situation in Russia and Turkey, and the First Light Cruiser Squadron was likewise retained in the Baltic. An important event in connection with the Fleet in home waters was the commissioning for service of the new battle-cruiser "Hood," which made her first cruise as flagship of Rear-Admiral Sir Roger Keyes. No changes occurred during the quarter in the composition of the Admiralty Board.

NAVAL COMMANDS AND APPOINTMENTS.

On April 28th Admiral Sir Cecil Burney relinquished the post of Commander-in-Chief at Portsmouth on account of ill-health, and was succeeded by Admiral the Hon. Sir Somerset A. Gough-Calthorpe, formerly Commander-in-Chief in the Mediterranean and High Commissioner at Constantinople.

A number of changes occurred on May 1st, when four rear-admirals and four captains took up new posts. Rear-Admiral Crawford MacLachlan succeeded Rear-Admiral C. F. Corbett in command of the Reserve Fleet at Rosyth, with his flag in the battleship "Hercules." Rear-Admiral M. H. Hodges hoisted his flag in the "Castor" in command of the Destroyer Flotillas of the Atlantic Fleet, in succession to Commodore H. J. Tweedie. At the Admiralty, Rear-Admiral E. F. Bruen became Director of Naval Equipment, in the Controller's Branch, in succession to Rear-Admiral E. M. Phillpotts; and the latter went to Woolwich as President of the Ordnance Committee in the place of Rear-Admiral A. W. Craig.

Captain M. W. W. P. Consett on May 1st became Naval Adviser to the Supreme Council in Paris. Captain B. E. Domville succeeded Captain C. T. M. Fuller as Director of Plans on the Naval Staff, the latter officer having been appointed Chief of Staff to Admiral Madden in the "Queen Elizabeth." Captain A. R. W. Woods took up duty with the President of the Naval Inter-Allied Commission of Control; and Captain S. T. H. Wilton, from the Naval Ordnance Department, joined the Local Defence Division of the Naval Staff.

A reduction in the senior commands in China was effected on May 6th, when Rear-Admiral G. H. Borrett became Senior Naval Officer in the Yangtse River, in succession to Commodore A. A. Ellison. Since March, 1919, Rear-Admiral Borrett had been Rear-Admiral Commanding the Fifth Light Cruiser Squadron in China, with his flag in the "Cairo." This appointment lapsed on his transfer to the "Kinsha" for duty in the Yangtse.

On May 26th, following the appointment of Rear-Admiral Sir William Goodenough to the African Command, Rear-Admiral L. Clinton-Baker became Admiral-Superintendent at Chatham Dockyard. With the appointment on April 8th of

Rear-Admiral Sir E. Alexander-Sinclair to be Admiral-Superintendent at Portsmouth, in succession to Vice-Admiral Sir Charles Vaughan-Lee, all the home dockyards have changed hands since the Armistice. On April 15th Captain Richard Hyde became Captain of the Dockyard, Deputy-Superintendent, and King's Harbour Master at Devonport, in succession to Captain Christopher Payne, who assumed command of the torpedo schoolship "Vernon."

A change in the command of Osborne Naval College occurred on May 5th, when Captain F. A. Marten, late of the light cruiser "Dragon," relieved Captain H. F. G. Talbot, who had been in command since December 15th, 1918. Captain Talbot was in ill-health, and died about two months later.

It was officially announced on May 13th that Captain A. G. Hotham, the Director of the Trade Division of the Naval Staff, would hoist his broad pennant as commodore, second class, in the light cruiser "Chatham" as commander of the New Zealand Division which was to be formed for service under the Government of that Dominion. Invitations were issued to the Fleet for officers and men to volunteer for service in the "Chatham" and "Philomel," under an agreement for permanent transfer or to be lent for three years, with pay at Australian rates, and free passage to and from New Zealand unless proceeding by ship of war.

On April 1st Rear-Admiral the Hon. Victor Stanley was appointed Admiral of the Training Service, in succession to Vice-Admiral Cecil S. Hickley. The Admiralty published in Orders on June 9th a statement describing the duties of the A.T.S., who is concerned solely with the training establishments for boys and young seamen. His headquarters are at 47, Victoria Street, S.W.1, instead of in the "Powerful" at Devonport, as before the war.

Important changes in the Engineering Branch of the Navy occurred on June 8th, when Engineer-Rear-Admiral Robert B. Dixon became Deputy Engineer-in-Chief, and Superintendent of Naval Engineering, in succession to Engineer-Rear-Admiral Edouard Gaudin, who completed three years in the post on that date. The place of Admiral Dixon as one of the Assistant Engineers-in-Chief was taken by Engineer-Captain W. M. Whayman, formerly Engineer Manager at Rosyth Dockyard.

On June 21st it was announced that Colonel-Commandant (temporary Brigadier-General) Gunning M. Campbell, R.M.A., had been selected to succeed Major-General Sir David Mercer as Adjutant-General of the Royal Marine Forces, to date September 30th. Sir David, however, died on July 1st (his fifty-sixth birthday) from heart failure following an operation, and his successor was therefore appointed as from July 2nd.

PEACE REDUCTIONS.

Fewer changes remained to be effected under this head during the past quarter. On April 1st the Port Minesweeping Office at Grimsby was closed and the personnel transferred to the books of the "Pembroke VIII." From June 15th the appointment of the Senior Naval Officer at Grimsby was terminated. Commander C. S. Forbes had held this post since November, 1919, in conjunction with that of Mobilising Officer for the Humber District. The Engineer-Commander for the Humber District, Engineer-Commander W. H. Crichton, was ordered to be retained until July 15th to deal with vessels arriving for return to their owners, and after that date the duties were to be carried out by Engineer-Lieutenant-Commander R. J. Brown. The offices of the Mobilising Officer, Humber District, and Assistant Mobilising Officer, Hull, were closed on June 15th and May 15th respectively, and all correspondence for these officers was ordered to be addressed to the C.O.A., Immingham, or the Engineer-Commander of the District at Grimsby. Aberdeen

Naval Store Depot was closed in April. On May 15th the Admiralty notified that, in view of the early closing of Lerwick Wireless Station, all outstanding demands for this station should be considered cancelled. From the same date the transport base at Rouen was officially closed.

On June 30th the office of the Senior Naval Officer for the Clyde District was closed, and all correspondence in connection with repairs and recondition of ships in the district was ordered to be addressed to the Principal Repair Overseer. From July 1st the following vessels came under the control of the Divisional Officer of Coastguard at Greenock, who was to be responsible for the pay, etc., of the caretakers and maintenance parties:—The Russian cruiser "Askold," laid up in Holy Loch with civilian caretakers; the depot-ship "Pactolus" and minesweepers "Goole" and "Bloxham," laid up in Gare Loch with naval ratings as care and maintenance parties; and H.M.S. "Ophir," and a floating dock, laid up in Gare Loch with civilian caretakers. Forty Canadian-built drifters expected shortly to arrive from Canada were also to come under the control of the Divisional Officer of Coastguard at Greenock.

The Trawler Section of the Royal Naval Reserve ceased to exist on April 30th. Such trawlers and drifters as still remained under naval control were ordered to be manned from that date by active service officers and men, or, in the case of those reconditioning or awaiting return to their owners, by civilian caretakers. The strength of the R.N.R. (T.S.) at the Armistice numbered 37,145. Mine-sweeping was carried out by it not only off the British coasts, but in the Mediterranean, South and West Africa, East and West Indies, Canada, Australia, New Zealand, and the Straits Settlements. Altogether, between 1914 and 1919, 54,000 warrant skippers and ratings passed through the Section, and 2,238, or 6 per cent. of the total at the Armistice, were awarded honours, including two V.C.'s.

NAVAL OCCURRENCES.

THE CANADIAN NAVY.—In a statement on the Government's policy on March 25th, in the Canadian House of Commons, Mr. Ballantyne, Minister of Marine and Fisheries, said that the Dominion had had under consideration for some time the question of Canada's naval defence, and the suggestions of Lord Jellicoe. In view of Canada's heavy financial commitments and the fact that Great Britain has not decided her permanent naval policy, and of the approaching Imperial Conference at which the question of the naval defence of the Empire will come up for discussion between the Home Government and the overseas Dominions, it has been decided to defer in the meantime action in regard to the adoption of a permanent Canadian naval policy. The Government has decided to carry on the Naval Service along pre-war lines, and has accepted an offer by Great Britain of one light cruiser and two torpedo-boat destroyers to take the place of the present obsolete and useless training ships "Niobe" and "Rainbow." The Minister, in order to be free thoroughly to reorganize and place the present Service upon an economical basis, has issued orders for the demobilization of all officers and naval ratings, and for the discontinuance of civilian help at headquarters and at the naval dockyards at Esquimalt and Halifax. Canadian officers who are in the Imperial Fleet and are being paid by the Canadian Government will be recalled and placed on duty with the Canadian Service. The Naval College will also be continued. After the reorganization only those officers and other ratings will be taken on who are absolutely necessary and possess the qualifications desired. Mr. Ballantyne also announced the retirement of Admiral Kingsmill, the head of the Canadian Navy. His place will be taken by a senior officer.

BLACK SEA OPERATIONS.—A War Office communique, issued on March 29th, in reference to the capture by the Bolshevik troops of Novorossisk on the 27th, said that "the British Navy, by the most strenuous exertions and at the last moment, was able to embark on the various vessels waiting in the port a large number of the Volunteer forces who have put up so heroic a struggle during the past months. . . . The greatest praise is due to Admiral Seymour and all ranks of H.M. Navy, to whose magnificent work is due the success of the evacuation." On March 10th Mr. Long said in Parliament that while returning to Novorossisk, after conveying General Cotton to Tuapse, H.M.S. "Steadfast" was fired upon from the latter place by Green Guards, and hit by a 60-pounder shell and machine-gun bullets. No other of his Majesty's ships had been fired on since the capture of Odessa.

RAIL CONCESSIONS WITHDRAWN.—On March 31st the Admiralty announced that the following free railway warrant concessions, which were granted during the war, would be withdrawn on May 31st, and no free warrants under the orders in question would be issued for use after that date:—Free warrants for annual leave to officers and ratings authorized by Monthly Order 697 of 1915; free warrants for sick leave to officers and ratings, and free warrants to officers discharged invalidated from causes due to the Service, granted by Monthly Order 407 of 1915; and free warrants to ratings when proceeding home on account of the serious illness or death of a parent, wife, or child, granted under Monthly Order 184 of 1915. It is probable that considerable modifications will be made at an early date with regard to cheap travelling concessions. It should be particularly noted by officers, says the Admiralty, that it is necessary for them to travel in uniform in order to obtain the benefit of the cheap fare concessions. The free and cheap travelling facilities for relatives visiting naval patients in hospital, granted in 1914 and 1915, were withdrawn on April 1st.

FISHERIES REPORT.—A report entitled "Fisheries in the Great War" was issued at the end of March as a Parliamentary publication (Cd. 585, 2s.). It gives the story of English and Welsh sea fisheries and sea fishers during the period from 1915 to 1918, when no reports on this branch of national activity could be given. It was decided at the end of March by certain members of the House of Commons to form a small Committee to watch over the interests of the fisheries on our coasts. Sir Edward Beauchamp (Lowestoft) was appointed chairman, Sir Arthur Fell (Great Yarmouth) vice-chairman, and Major Entwistle (Hull) secretary.

NEW AIRCRAFT-CARRIER.—On April 6th the aircraft-carrier "Eagle" was commissioned by Captain Eric V. F. R. Dugmore on the Tyne for trials. She was afterwards taken to Portsmouth Dockyard for completion. The "Eagle" was formerly the Chilean battleship "Almirante Cochrane," and was taken over by the Admiralty in an early stage of her construction at the Armstrong yard.

NEW SIGNAL DEPARTMENT.—On April 17th it was ordered that the duties connected with signals hitherto performed at the Admiralty, and by the Superintendent of Signal Schools, Portsmouth, under Admiralty directions, were to be combined and dealt with by a single department at the Admiralty known as the "Signal Department." All matters connected with the provision, organisation, and maintenance of, and the training of personnel in, wireless telegraphy, radio-telephony, visual signalling, etc., will be within the scope of the department, at the head of which is the Director of the Signal Department (short title, D.S.D.). This officer is on the same footing as the Director of Naval Ordnance and the Director

of Torpedoes and Mining. Captain John K. im Thurn was appointed the first Director of Signals on April 28th.

PRIZE MONEY.—On April 21st the distribution of the money available in the Naval Prize Fund began in the Department of the Accountant-General. The amount of a full share for thirty months' qualifying service is 50s., for lesser qualifying periods the rate is reduced proportionately. On June 12th the distribution was extended to those officers and men who were in the Navy during the war but had since retired or been demobilised.

PROMOTION ZONES.—On April 21st the Admiralty announced that, as there appeared to be a certain amount of doubt with regard to their prospects of promotion among senior commanders and lieutenant-commanders, it was considered desirable to make it clear that officers who had passed the upper limits of the zones of promotion would not be promoted unless for exceptional services. The upper limits were, for commanders, eight years' seniority as such; and for lieutenant-commanders six-and-a-half years' seniority as such.

COASTAL MOTOR BOATS.—On April 24th the Admiralty stated that four lieutenants, of from one to four years' seniority, would be required every six months for training and subsequent service in the Coastal Motor Boat branch for a total period of two years if found suitable, and applications were invited. The four subsequently chosen and appointed for training at Osea from July 1st were Lieutenants J. R. D. Freeman, D.S.C., J. E. J. Yunge-Bateman, C. L. Howe, and G. E. P. How.

NEW SUBMARINES.—"K.26," laid down at the Vickers works, Barrow, in July, 1918, was taken in hand at Chatham Dockyard in April for completion. In June "L.23" was similarly transferred from Barrow to Chatham, and the Admiralty ordered "L.26" and "L.27," from Barrow, to be towed to Portsmouth when ready, to be completed there; and "L.53," from Armstrong's on the Tyne, to Chatham, the last-named boat to be fitted for surface work only at present.

DISCHARGE BY PURCHASE.—At the end of April discharge by purchase from the Navy, in abeyance during the war, was ordered to be resumed on July 1st. A new scale of payments authorised showed that the cost had been doubled in most cases, and more than doubled in some.

PETTY OFFICERS' UNIFORM.—With a view to improving the status of the senior petty officers, the Admiralty on April 28th ordered those over four years' seniority as such, and who had previously been dressed as seamen, to wear the Class III. uniform, with jackets and peaked caps, but with the gold badge and silver anchor on the last-named such as had formerly been worn by chief petty officers. Petty officers over four years' service will also wear gilt buttons on their jackets and overcoats, as authorised for C.P.O.'s.

CRUISE IN IRISH WATERS.—From May 4th to May 31st the Second Battle Squadron under Vice-Admiral Sir Arthur Leveson cruised in Irish waters, accompanied by a flotilla leader and six destroyers. The places visited included Arklow, Bantry, Foynes, Galway Bay, Killary Bay, Killala Bay, Kingstown, Dundrum Bay, Belfast Lough, and Lough Swilly. Destroyers visited in addition Dublin, Wicklow, Warren Point, Lough Carlingford, Londonderry, Killybegs, Clifden Bay, Tralee Bay, Valentia Harbour, Kenmare River, Waterford, and Kinsale.

COMMONWEALTH NAVAL FLAG.—The official flag of the Naval Board of Commonwealth was notified in Admiralty Orders early in May. It is a rectangular one, divided horizontally into two equal fields, of which the upper is red and the lower blue, with a gold anchor placed horizontally in the centre. The flag will be saluted within Commonwealth waters by 15 guns, on the same occasions as those on which the flag of the Board of Admiralty is saluted.

STOREKEEPING IN SHIPS.—As a result of successful preliminary trials, the system of naval storekeeping on the centralised plan was ordered early in May to be applied to all capital ships in the Atlantic Fleet, the necessary alterations to the store-rooms being taken in hand as each ship came in for refit. The effect is to make the paymaster responsible for the maintenance and replenishment of all stores, and the charge of these is transferred to him from the engineer, gunnery, torpedo, navigating, shipwright, and other technical officers, who are relieved of the extraneous duties of storekeeping and accounting.

OAK LEAF EMBLEM.—On May 8th it was notified in Navy Orders that the King had been pleased to approve of an oak leaf in bronze being worn on the riband of the Victory Medal by all naval officers and men awarded that medal who had also received a certificate that their names had been mentioned in despatches for service during the war. Those awarded the British War Medal, but not the Victory Medal, are not eligible to wear the emblem.

OFFICERS' TECHNICAL COURSE.—It was decided in May to reintroduce the Technical Courses for Senior Officers, but on lines somewhat different from those in force prior to the war. The course is held at Portsmouth and includes three weeks in the "Excellent," three weeks in the "Vernon" for torpedo, mining, anti-mining and anti-submarine, one week at the Navigation School, and one week at the Signal School. The first course was to be held from August 9th to October 1st. Later, the Admiralty stated that this course in some respects constitutes preparation for the War Course, and as a general rule officers taking the latter should have been through the Technical Course within the previous six months.

ROYAL MARINE LISTS.—From May 19th it was ordered that officers of the R.M.A. and R.M.L.I. entered since January 1st, 1912, who had been borne on one list for purposes of advancement, would in future be borne on separate lists and take their turn for promotion on their respective lists as vacancies occurred on those lists.

NAVY MARCHING TUNES.—An Admiralty Order of May 19th decrees that when detachments or brigades of seamen march past at reviews and the like, the marching tune is to be "Hearts of Oak"—properly, "Heart of Oak"—which is taken from Garrick's "Harlequin's Invasion" of 1759, and was written and composed in commemoration of the victories of that year (Quiberon, Lagos and Quebec). The Royal Marines will use their regimental march, "A Life on the Ocean Wave," written and composed in New York in 1838, the words by H. E. Sargent, an American, the tune by Henry Russell, the well-known English songwriter and singer.

"HOOD" COMPLETED.—On May 18th the flag of Rear-Admiral Sir Roger Keyes, Commanding the Battle-Cruiser Squadron, was transferred to the "Hood" from the "Tiger," and Captain W. Tomkinson, who had been in charge of the "Hood" since the new year, became Chief Staff Officer to Sir Roger. The first cruise made by the vessel was to Scandinavia and the Baltic.

"EMERALD" LAUNCHED.—On May 20th the light cruiser "Emerald" was launched at the Armstrong yard on the Tyne, by Lady Craig, wife of the new Parliamentary Secretary to the Admiralty. The "Emerald" was the last vessel of the war programmes building in a private yard. Her sister-ship, the "Enterprise," was taken in April from Clydebank to Devonport Dockyard for completion, and the "Emerald" was also ordered to be towed there when ready.

NAVAL RETIREMENTS.—On May 22nd the Admiralty decided that officers promoted whilst the special scheme of retirement is operative, except those promoted automatically by reason of their seniority, will not, if they retire after promotion, be eligible for the special retirement terms applicable to their new rank. They may, however, retire on the special terms applicable to the rank from which they have been promoted, or under the ordinary retirement regulations laid down for their new rank.

PAYMASTERS AND SPECIALISTS.—On it appearing that there would be a small surplus of paymaster-lieutenants and junior officers of the Accountant Branch, the Admiralty withdrew the restriction imposed upon such officers taking advantage of the special retirement scheme of April 1st. No retirements were to be allowed to take effect until Service requirements permitted. On June 19th the Admiralty announced that no further retirements under the scheme could be allowed of commissioned officers below the rank of commander who had specialised in gunnery, torpedo, navigation, signals and W/T, submarines, and physical and recreational training; nor of warrant officers trained in director-firing.

CADETS FOR MERCANTILE MARINE.—On May 22nd it was notified that cadets withdrawn from the Royal Navy to enter the Mercantile Marine would be allowed certain concessions by the Board of Trade. For the purpose of qualifying candidates for certificates of competency as second mate, the Board will accept service in the two naval colleges as equivalent to time spent at sea, in the ratio of two months so spent to one month at sea. The total amount of such service, however, will not be regarded as equivalent to more than one year's sea service. Service in a seagoing training cruiser will be accepted in full in addition to the proportional period allowed for the training establishments on shore. In the case of candidates for certificates of competency as engineer, the Board will allow time spent in the colleges to count as equivalent to one-third of the workshop service required, subject to a maximum allowance of one year.

OFFICERS' APPOINTMENTS.—An Admiralty Order dated May 26th states that officers cannot, as a general rule, be permitted to select or decline appointments. Applications to have an appointment cancelled are not to be made except for urgent reasons, which are to be fully stated in writing. If an officer making such an application is on full pay, his commanding officer in forwarding it is to state whether or not he recommends that the application shall be granted. This does not apply to officers on unemployed pay. Many officers, as a matter of principle, never decline an appointment at whatever personal or private inconvenience. It is evidently unfair to such officers if others are permitted to do so, with the object of avoiding foreign service, appointments of an arduous character, etc. If two officers desire to exchange their appointments, an application for exchange may be forwarded for consideration through the usual channels, provided that adequate reasons are given, and that the commanding officers of both ships concerned express their approval of the application. Except as authorized under this category, the order forbidding official applications for appointment to particular ships is to be observed.

BALTIC CRUISE.—Rear-Admiral Sir Roger Keyes, with the "Hood" and "Tiger" and a half-flotilla of destroyers, made a cruise to the Baltic during June. Leaving Devonport on May 29th, the vessels proceeded to Kiøge Bay until June 4th; thence to Kalmar (Sweden), passing close to Visby in Gothland; and thence to Nynasham, from which place officers and men journeyed to Stockholm and were hospitably entertained. After a week-end at Kiøge Bay, from the 12th to 14th, the squadron went to Apenrade, in Schleswig-Holstein, and on June 17th proceeded to Copenhagen, anchoring in the Sound. From June 24th to July 1st it was off Christiania, and thus completed the round of the three Scandinavian capitals. It returned to Scapa on July 3rd.

PRINCE GEORGE'S CRUISE.—On June 1st the training ship "Temeraire" left Portsmouth on a six months' cruise with naval cadets, among whom was Prince George, the King's youngest surviving son, who had passed out of Dartmouth College at Easter. The "Temeraire" was to visit Irish, Scottish, and Norwegian ports until September 2nd, and after coaling and oiling at Rosyth was then to proceed to the Mediterranean.

NAVAL HELP FOR IRELAND.—On June 3rd the battleships "Valiant" and "Warspite" left Devonport for Queenstown with 1,200 Royal Marines, intended to reinforce the Coastguard personnel in Ireland and assist in maintaining the navigational services, including the lighthouses, coast-watching for wrecks, and the like. On ten occasions during the latter half of May attacks had been made on Coastguard stations in Ireland, and on the 14th of that month Mizen Head lighthouse, Cork, was raided by a dozen armed men, who took away detonators and gun-cotton. Mizen Head is the fog signal station for south-west Cork and on its service depends the safety of all cross-Atlantic traffic making the south-west of Ireland. The Admiralty made it clear that all that they had in mind in sending Marines to Ireland was to protect the naval personnel engaged there in duties which were not merely necessary for the Navy, but for the safety of seafarers generally.

DIRECTION-FINDING STATIONS.—From midnight on June 14th-15th, the naval wireless direction-finding stations at the Lizard and Carnsore were closed for a month. The Admiralty announced that reports showed the bearings given by them to have been often incorrect, and H.M.S. "Antrim" was therefore sent to carry out certain experiments with the stations in order to ascertain the extent and nature of the errors and thereby correct them.

MARINE OFFICERS AFLOAT.—On June 16th it was officially stated that lieutenants and captains of the Royal Marines, when embarked, would rank with naval officers as follows:—Marine Lieutenants under four years from date of entry with Sub-Lieutenants, R.N.; Lieutenants on completing four years from entry; and Captains under twelve years from entry, with Lieutenants, R.N.; Lieutenants and Captains on completing twelve years, with Lieutenant-Commanders, R.N. An exception to the above is that Captains, R.M., entered prior to January 1st, 1912, are to rank, as at present, with Lieutenant-Commanders, R.N., when embarked, irrespective of their length of service in that rank.

TIME-KEEPING AT SEA.—On June 26th the Admiralty announced that a uniform system of time-keeping at sea had been adopted in the Navies of Great Britain, France, Italy, Spain, and the United States. The system has been adopted to ensure vessels at sea within certain defined limits of longitude keeping the same time in a similar manner to that now used on land, where, for example, London, Plymouth and Dover all keep the same time and not the local time of each place;

the ship's clock will therefore now be set to show the time of a definite hourly meridian instead of being set to an indefinite time selected by the ship. The system is fully illustrated on British Admiralty Chart No. D.6.

SERVANTS' ALLOWANCE.—In June it was approved that naval officers living on shore without the services or partial services of a servant provided at the expense of the Crown, and in receipt of the full pay of their rank and lodging and provision allowances at the ordinary rates, were eligible for servants' allowance. The rates vary from £60 per annum for captains and commanders, flag-lieutenants and secretaries, to £13 10s. per annum for gun-room officers and warrant officers. Servants' allowance was formerly only granted to a very few senior officers in specified appointments, such as those in charge of dockyards.

NAVAL CANTEENS.—On June 26th the Admiralty, in response to requests, approved of a scheme as an experimental measure whereby groceries and other articles usually stocked, but not rationed by the Food Controller, might be purchased in the canteen by officers and men, including pensioners employed in ships and establishments, for the benefit of their wives and families. In consequence, the order of 1917 forbidding foodstuffs purchased in naval canteens being taken out of ships and establishments was cancelled.

THE "EFFINGHAM."—On June 30th Sir James Craig stated that the light cruiser "Effingham" was first laid down in Portsmouth Dockyard on April 2nd 1917. She was laid down originally as part of the war programme, without definite date for completion, but to be accelerated as required. So far as the Dockyard work was concerned the construction was about 25 per cent. completed. The machinery, however, which was being obtained by contract, was about 97 per cent. complete, and the gun-mountings were ready. The average number of men engaged on her construction during the last four weeks was about 890. It was the intention to finish her, but the date could not be given. So far as could be foreseen, the slip would be vacant about May, 1921.

FOREIGN NAVIES.

AUSTRIA.

ALLIED COMMISSION OF CONTROL.—On Rear-Admiral E. B. Kiddle being appointed Rear-Admiral in the Second Battle Squadron, Atlantic Fleet, to date April 1st, he was succeeded as British Naval Representative on the Inter-Allied Commission of Control for the Austrian Peace Terms by Rear-Admiral Hugh D. R. Watson, C.B., C.B.E., M.V.O., formerly President of the Sports Control Board. In reply to a question on March 30th, Mr. Cecil Harmsworth stated that the ex-Austro-Hungarian Fleet consisted of Dreadnoughts and pre-Dreadnought battleships, cruisers, light cruisers, destroyers, and submarines; in addition, there was a Danube flotilla of 28 monitors and patrol boats.

BELGIUM.

PROPOSED PURCHASE OF SLOOP.—On March 10th a Belgian Naval Commission made a visit to Devonport Dockyard and inspected certain sloops on the disposal list there, with a view, it was reported, of purchasing one of these vessels.

CHILE.

WARSHIPS FROM ENGLAND.—On May 4th Admiral Luiz Gomez, Chief of the Chilean Naval Commission, accompanied by Commander Julio Merino, a member

of the Commission, visited the works of J. Samuel White and Co., Limited, at Cowes, and inspected the work being carried out on the Chilean gunboats "Lencoton," "Elicura," "Colocolo," and "Crompello," preparatory to their return home from active service in the cause of the Allies in European waters. The Admiral expressed himself as highly satisfied with the work now in progress for his Government. According to the Valparaiso correspondent of *The Times*, the Chilean Navy has purchased six minelayers of 700 tons from Germany, and two of 300 tons from England.

FRANCE.

PROPOSED SUBMARINE POLICY.—On March 19th, in the Chamber of Deputies, the interpellation of M. de Kerguezec on the naval policy of the Government was discussed. M. de Kerguezec insisted on the necessity of adopting a new naval policy, declaring that, in 1914, France's safety was not assured by the fleet. (Cries of protest.) M. de Kerguezec gave the main outlines of his proposed naval scheme, which aims particularly at the creation of a defensive submarine fleet, and said he regretted that the faults in the organization of the Navy had not been denounced at the very beginning of the War. M. de Kerguezec then resumed his report on the French strength in submarines. "We have," he said, "forty-four submarines which the Germans have left us. They were, however, stripped of all stores and armament, and by a clause in the Peace Treaty we are obliged to destroy them." He added that he would certainly be the interpreter of the unanimous opinion of the Chamber in asking for the revision of this clause. He also stated that he did not believe the state of the finances of France would permit of costly experiments in the construction of cruisers. On the contrary, it should be towards the construction of submarines for defensive purposes that the French efforts ought to be directed.

FISHERY SUPERVISION.—It was officially announced on February 7th that the French Naval Service for the supervision of fishing in the Channel and North Sea had been re-established under pre-war conditions, and would comprise the following vessels:—(1) Fishing guard ships "Flamant," renamed "Quentin-Roosevelt," and "Sentinelle"; and (2) the trawler "Sajou." The British Admiralty notified in Navy Orders that these vessels might be expected to call from time to time at various fishing ports in the United Kingdom.

GREECE.

ADMIRAL'S RETIREMENT.—On February 4th an Athens telegram reported the retirement from active service, with the rank of full admiral, of Vice-Admiral Coundouriotis, who commanded the Greek Navy during the Balkan War and defeated the Turkish Fleet at Mudros and the Dardanelles. Admiral Coundouriotis left Athens with M. Venezelos on September 25th, 1916, when the latter went to head the revolutionary movement in Crete, and subsequently became a member of the Salonika Triumvirate. He was the first officer to reach Admiral's rank, which had been formerly held by the King alone.

JAPAN.

ADMIRAL'S VISIT TO ENGLAND.—Early in March Rear-Admiral H. Kato, K.C.M.G., C.V.O., Japanese Naval Chief of Staff, with about five other Japanese naval officers, visited England and made an inspection of the naval establishments at Portsmouth and Devonport. These included, at Devonport, the "Impregnable" and "Indus," boys' and artificers' training establishments, and the dockyard; and at Portsmouth, the Naval Barracks, gunnery school at Whale

Island, "Vernon" torpedo school, the Submarine Depot, and the dockyard, as well as a visit to the seaplane-carrier "Vindictive." The party also crossed to Osborne to visit the Naval College, and Surgeon-Commander Kojima inspected the Royal Naval Hospital at Haslar.

NETHERLANDS.

FISHERY SUPERVISION.—On February 5th the Dutch fishery cruiser "Zeehond," commanded by Naval Captain-Lieutenant A. F. Hansen, took over the duty of police supervision of the North Sea Fisheries (Holland).

NAVAL POLICY.—In a written memorandum in reply to the preliminary report of the First Chamber on the Naval Budget the Dutch Government on May 22nd outlined its naval policy. The Government considers disarmament premature in present circumstances, and consequently opposes the liquidation of the Fleet, which is indispensable for the maintenance of the country's independence. The Government takes the point of view that the defence of Holland by sea should be undertaken with "small material," such as submarines, minelayers, aeroplanes, and guard-vessels, as the construction of a big fleet would be beyond Holland's strength. For the defence of the colonies destroyers and a few fast light cruisers would be necessary, in addition to the "small material," and the Government therefore strongly insists that the construction of the cruisers "Java" and "Sumatra" should be continued. They are expected to be ready for service in three years' time.

NORWAY.

"U" BOAT VICTIMS.—On February 11th, at the annual dinner of the Norwegian Club in London, Sir Francis Newbolt, K.C., in presiding, said that it was proposed to erect a stone at Bergen to the memory of the 1,800 Norwegian sailors murdered by the Germans during the war, not with the idea of perpetuating existing bitterness, but simply to express the admiration of one seafaring people for the consistently gallant conduct of another during a difficult and dangerous period. He believed it would cement the good feeling between this country and Norway.

POLAND.

BRITISH NAVAL MISSION.—At the urgent request of the Polish Government, a British Naval Mission, under Commander E. L. Wharton, R.N., is assisting them in an advisory capacity in regard to maritime matters such as river police and wireless telegraphy, mine-sweeping and the organization of docks and sea-borne traffic. The Polish Government are hoping eventually to have a small naval force of their own. There are no British naval forces in Poland, and the Mission includes, in addition to Commander Wharton, four officers and nine ratings.

PORTUGAL.

NEW SLOOPS.—On March 5th it was announced that the Portuguese Government had acquired, on exceptionally favourable terms, six sloops from the British Navy, the "Acacia," "Anemone," "Cyclamen," "Gladiolus," "Jessamine" and "Jonquil." They were completed in 1915-16, and belong to a class of vessel which gained a high reputation for seakeeping qualities during the war. Their displacement is 1,210 tons, length 250 feet, draught 11 feet, and for propulsion they have reciprocating engines of 2,500 horse-power, giving them a speed of about 17 knots. The Portuguese gunboat "Pedro Nunez" arrived at Devonport with a navigating party to carry out the acceptance trials.

SPAIN.

The light cruiser "Reina Victoria Eugenia," ordered in 1914 and laid down a year later, was launched at Ferrol on April 21st. Displacement, 5,500; 25 knots; nine 6-in. guns.

UNITED STATES.

NAVAL EXPANSION REJECTED.—On March 13th, in the interests of economy, the House of Representatives Naval Sub-Committee rejected the proposals for an extended building programme for 1921 urged by Mr. Daniels, the Naval Secretary, on March 6th. An appropriation of 72,000,000 dollars was, however, made to continue the three-year programme of 1916.

PERSONNEL.—On March 6th, in evidence before the House Committee on Naval Affairs, Mr. Daniels stated that the Navy numbered 103,000 men, and by the end of the fiscal year would total only 125,000, adding: "We probably will not get our 143,000, which is the minimum number I have recommended and would recommend." Rear-Admiral Washington, in evidence before the Committee, said there were 4,666 cases of desertion in the last half of 1919, including 1,000 petty officers, and there were 1,663 cases of desertion in the first two months of this year. Over 1,000 officers had resigned since the Armistice, 1,450 resignations had been accepted, and if these conditions continued, by 1921 not only would the Navy be under-manned, but 90 per cent. of those on the list of officers would be inexperienced boys.

"MARYLAND" LAUNCHED.—On March 20th Mr. Daniels, Secretary to the Navy, was present at the launching of the super-Dreadnought "Maryland." The "Maryland" is the first of four of her class, and is the largest vessel in the United States Navy. She has a length of 624 ft., a beam of 97 ft., and a displacement of 32,950 tons. Her armament includes eight 16-in. guns—said to be the first naval guns of that size ever installed—which are mounted two in each of four turrets, two forward and two aft. The keel of the "Maryland" was laid on April 24th, 1917.

RELATIVE STRENGTH.—On May 20th Mr. Daniels, continuing his evidence before the Senate Committee, said that at the end of the war the personnel of the American Navy outnumbered that of the British Navy by 520,041 to 415,162. On June 1st, 1920, the Navy Department announced that the census of officers and men then on active duty was as follows:—Officers, regulars, 7,471; reserves, 1,046. Warrant officers, regulars, 1,530; reserves, 64. Midshipmen (Naval Academy), 1,795. Total for officers, 11,906. Men, regulars, 103,974; reserves, 1,423; prisoners (officers and men), 975; total, 106,372. Total active service personnel, 118,278. The Nurse Corps had a total of 597, and the Marine Corps comprised 1,110 officers and 15,746 men, giving grand totals under the Navy of 13,016 officers and 122,715 men. The 900 enlisted men of the Reserve Force called back into the Navy are omitted from the above computation. Based on a required strength of 170,000, the enlisted strength of the Navy on June 1st was short by 66,026 men. The Marine Corps was short by 11,687 men, based on a strength of 27,400.

NEW BATTLE-CRUISERS.—On June 3rd it was stated in the American newspapers that the "Saratoga" and "United States," two of the six new battle-cruisers, will have a main battery of eight 18-in. guns. They will be 850 feet long and of 43,500 tons displacement, with engines of 180,000 horse-power developing a speed of 33½ knots. The four other vessels, "Constitution," "Constellation," "Lexington," and "Ranger," will each mount eight 16-in. guns. All six vessels will be oil-burners with the electric drive.

BRITISH AND AMERICAN SHIPBUILDING.—In reference to the above, Sir F. Hall inquired in the House of Commons as to the number of capital ships possessed by the British and American Navies mounting 18-in. and 16-in. guns respectively in 1925, on the assumption that the present naval programme of the two countries was adhered to, and what would be the respective numbers of ships in the two Navies with a speed of $33\frac{1}{2}$ knots or more. Mr. Long: The answer to the first part of the question is as follows:—Capital ships mounting 18-in. guns—United States: Nil (according to latest official reports). Great Britain: Nil (according to latest official reports). Capital ships mounting 16-in. guns—United States: 16. Great Britain: Nil. The answer to the second part of the question is:—Capital ships, with a speed of $33\frac{1}{2}$ knots—United States: Six. Great Britain: Nil. Light cruisers, with a speed of $33\frac{1}{2}$ knots—United States: 10. Great Britain: Nil. Destroyers, with a speed of $33\frac{1}{2}$ knots—United States: 266 (approximately). Great Britain: 196, including those now in special, reduced, and reserve complements; or 97, not including those in special, reduced, and reserved complements.

Sir F. Hall: Is there a report of ships having been built in the United States mounting 18-in. guns, and has the right hon. gentleman considered the number of ships being built by the United States with a speed of $33\frac{1}{2}$ knots?—Mr. Long: The Admiralty are following these developments with great closeness. The hon. gentleman may rely upon it that we shall not fail to ask Parliament for the necessary powers if we think we may fall behind our proper strength.

MILITARY NOTES.

APRIL—JUNE, 1920.

GREAT BRITAIN.

Armies of Occupation.—On April 27th the War Secretary stated: On the Rhine there were approximately 14,000 British troops (13,000 effectives), 95,000 French (fighting strength 85,000), 16,000 Americans (14,500 combatants), 20,000 Belgian.

By May 7th the number of men employed in France or Flanders had been reduced to 11,000, 400 were at H.Q., including 28 officers. By end June H.Q. were broken up, and the men retained reduced to 4,000.

Distribution.—On June 15th the distribution of the Army was given as: Home (including 2,226 on Foreign missions) 150,973; Colonies 15,488; Rhine and plebiscite area 16,269; Constantinople 21,769; Egypt 30,669; Palestine 22,615; Mesopotamia and north-west Persia 70,251. Total 328,034 (exclusive of India).

On June 23rd as: 9,800 British, 55,500 Indian troops in Mesopotamia, as against 11,450 and 57,900 on April 1st; 3,700 British, 10,500 Indian troops in north-west Persia, as against 1,050 and 10,100 on April 1st; 9,000 Indian troops in east Persia.

Reserve (Section D).—On June 30th sanction was given to the increase of the R.E., Signal and Tank Corps, R.A.S.C., R.A.O.C., and 17 specified infantry regiments by 20,000 men. Men of between 20 and 35 could join for 4 years at 1s. a day. They would be liable for general service, and (after 1921) 12 days' annual training.

Prisoners of War.—On April 23rd the War Secretary stated: There were still 223 prisoners of war unaccounted for in Germany. No returns had been received from Turkey.

Air Defence.—On May 10th the War Secretary stated: 77 officers, 288 men (including depots and schools) were employed in air defence, 22 of the officers, 142 of the men around London. The annual cost was £103,000. No R.A.F. personnel was employed. The subject was under consideration.

Rank.—On May 25th it was notified that temporary officers invalided during the war were entitled to retain their rank on demobilisation.

Recruiting.—On May 25th, (a) discharged infantry soldiers, under 35, with 7-13 years' previous service, and fit for general service, (b) infantry reservists of Section B, were permitted to re-enlist as privates.

On June 16th the supply of recruits was stated to be "still very inadequate."

The Army Educational Corps was formed on June 17th.

Dress.—Full dress is to be reintroduced this year for the Household Cavalry and Guards; during the next four to five years for the rest of the army. Officers' uniforms will be rendered less expensive. £150 will be allowed to officers on joining; the same sum (minus £42 10s. already received) to those who joined during the war. Khaki, with cap and steel helmet, will remain the service dress. The total estimated cost is £3,000,000.

Guards.—During May-June a committee of officers considered the organisation of the Guards. On June 16th the War Secretary said: Its original proposal would have resulted in the reduction of the Welsh Guards to 1 company, and the formation in 1 regiment of the Irish, and 2 battalions Scots Guards, leaving 3 regiments of Guards each of 3 battalions. It was never intended to take such a step unless recruiting for the Irish and Welsh Guards failed. The maintenance of 5 regimental headquarters required careful study.

Bagpipes.—Requests made by Irish regiments to use bagpipes are under consideration.

Demobilisation.—On April 1st it was stated: 121,133 ex-service men, including 35,344 disabled, were employed in Government offices; 50,977 and 17,144 respectively by the Post Office; 5,407 and 3,493 by the Pensions Ministry; 4,576 and 3,431 by the Labour Ministry. 215,000 were unemployed.

On April 22nd there were two classes of training schemes under the Agricultural Ministry: (a) About 100 scholarships, etc., at agricultural colleges, (b) employment for 2,000 men under farmers. 1,750 men were in training in horticulture.

On May 8th the 35th annual meeting of the National Association for the Employment of ex-Soldiers was held. 8,378 men had been placed in permanent, 907 in temporary employment during the past year. Field-Marshal Earl Haig commented on the restrictions imposed by some trades unions.

On May 12th, 22,856 men were training, 20,633 had been trained, under the Labour and Pensions Ministries. Additional preparation was being made for 30,000. 24,880 were on the waiting list, as against 28,300 on February 1st; an increase to 32,000 was expected. The weekly average of all ranks placed in business, etc., was 289 in June, 1919, 610 in April, 1920.

On June 3rd, 202,000 men were unemployed, 23,000 disabled in training, 21,000 trained, 24,000 awaiting training. 4,000 disabled had been placed during the last three months. 16,835 firms were on the King's roll, employing 139,841 disabled men. 213,000 officers had been demobilised; 13,000 were unemployed, 13,000 had been given educational assistance, 4,000 were on the waiting list, 30,000 had been placed by the Appointments Branch. 300,000 of all ranks had been

demobilised. The Appointments Branch had 13,329 registered, 7,000 more were expected.

On June 22nd 191,000 men were unemployed, including 24,200 disabled, 22,469 had been trained, 23,821 were training, 23,721 awaiting training. 17,389 firms were on the King's roll, employing 145,536 disabled men. 4,451 officers were awaiting training, 33,757 had been placed.

On June 1st approximately 3,500,000 persons were drawing pensions in connection with the late war (1,700,000 men, 1,800,000 dependents).

On April 19th 5,794 civilians and ex-service men had been settled on 79,631 acres in England and Wales. Total acreage acquired or being acquired was 187,599. 20,060 applicants had been approved. 28,294 acres had been acquired for farm settlements, 511 men settled.

Royal Air Force.—Revised rates of monthly pay from August 1st, 1919, have been sanctioned in India from 2,300 rupees for Air Commodore in command to 525 rupees for Pilot Officer.

During May the Orange Free State branch of the Victoria League presented £1,500 to the Air Council for the endowment of two scholarships in the R.A.F. College. They were to be open to South African students born of a British father, and be worth £35 per annum.

Between January and June 310 planes were constructed (including sea planes and 30 civil), 4 airships were being built.

On June 14th there were 75 officers, 562 men, 307 followers in Mesopotamia, as against 74 (?), 548 and 318 on March 14th. The number in north-west Persia had been increased.

Territorial Army.—On May 15th His Majesty the King received the Lords Lieutenant, Lord Mayors and Lord Provosts of Great Britain at Buckingham Palace. He invited them specially to enlist the co-operation of employers of labour in giving all reasonable facilities for their men to join and train.

On June 15th the complete Army Estimates for 1920-1 were published. The war establishment of the Territorial Army was projected as 13,100 officers, 368,000 other ranks; the peace establishment as covering all the officers and 60 per cent. (220,500) of the men; the permanent staff as 612 officers, 2,425 other ranks. Precise strengths could not yet be fixed. The approximate totals of all ranks were: Cavalry, 4,146; Artillery, 45,037; Engineers, 15,277; Signal, 8,717; Infantry, 122,322; R.A.S.C., 4,491; R.A.M.C., 6,530; R.A.O.C., 782; ; R.A.V.C., 981; amounting to 208,373. 28,364 are at present unallotted.

On June 3rd enlistments for one year were sanctioned. By the end of the month recruiting was reported "slow but satisfactory."

INDIA.

On May 27th were published the Report of the Hunter Committee on the disturbances of April, 1919, the observations of the Government of India thereon, and the despatch in reply of the Secretary of State for India. They stated that Brig.-General Dyer had been retired with the approval of the Cabinet. He later received permission to address the War Council in writing, and the matter being thus considered *sub judice*, a debate in Parliament was postponed.

On June 3rd revised rates of pensions for senior officers were published. They ranged from £245 to £590 after 18 years' service, up to £800 for Lieut.-Colonels, or £900 for Colonels. The Indian Medical Service rates were revised to from £400 to £800 after 17 to 27 years' service. The rates were subject to revision on July 1st, 1924, and then triennially. Revised rules of leave and unemployed pay, etc., were promised early:

On June 4th the Indian general service medal, with clasp for Afghanistan or North West Frontier, was sanctioned for service (a) against the Afghans between May 6th and November 11th, 1919; (b) in Persia between May 6th and August 8th, 1919.

On June 16th the Secretary of State for India stated that he had suggested the formation of an auxiliary force on a voluntary basis. [The Defence Force had been suffered to lapse.]

On June 17th raiders were driven off near Fort Sandeman, Beluchistan, and Jundola, Waziristan.

MESOPOTAMIA.

Early in June tribesmen sacked Tel Afar (40 miles west of Mosul), and raided convoys near Kalaat Shergat (on the Tigris, 60 miles south of Mosul). They were punished and no further disturbance arose.

BELGIUM.

In November, 1918, the Army comprised 12 divisions infantry, 1 cavalry, etc., totalling 200,000 men, with 120 aeroplanes. In April, 1920, the strength was fixed at 100,000 men, composed of (1): 6 divisions, each of 3 regiments of 3 battalions, 4 groups of 3 batteries field artillery, 1 regiment cavalry, etc.; (2), 1 cavalry division of 3 brigades of 2 regiments, 2 battalions cyclists, 1 group horse artillery, 1 company mounted engineers, etc.; (3), Army troops, 1 brigade of 3 regiments garrison artillery, aircraft, railway, telegraph, pioneer sections, etc.

In May, khaki uniform was ordered to be retained, officers having three suits, men two. The tasselled cap was to be worn, trousers never turned up, shoes forbidden, and canes only permitted to mounted officers.

On May 19th Field-Marshal Lord French presented the Military Cross to the town of Ypres.

CAUCASUS.

On May 23rd the Bolsheviks crossed the Armenian frontier from Uzuncala; and ordered the Armenians to evacuate Karabagli and Zangezur on the Bolshevik lines of communication with the Turkish Nationalists. After the occupation of Baku on April 28th, the Azirbaijan Republic was quashed. On May 8th peace was signed with the Georgians at Tiflis, but fighting continued.

CRIMEA.

On June 10th General Wrangel, with the rested remnant of General Denikin's army, occupied Berdiansk, and on the 11th Melitopol, taking 5,000 prisoners, 27 guns. By the 27th he had advanced 100 miles and taken 10,000 prisoners, 48 guns. A British military mission of 87 officers, 303 men, was in south Russia.

FRANCE.

On June 1st General de Castelnau issued a plea for better pay of officers and N.C.O.'s. He declared that though bachelors could exist by exercising strict parsimony, married officers with families could hardly subsist. Several cases were mentioned.

On June 9th the War Minister proposed a yearly bonus for officers of 720 francs, with special field and uniform allowances. Officers to retain the rank they had gained during the war.

On June 15th the British Financial Secretary, W.O., stated: In June, 1913, the peace strength of the French army, including Colonial troops, was 653,000. In 1914 a total of 791,664 was budgeted for. The present strength was 660,000.

On June 17th the "definite" total of killed during the war was given as 1,358,872, including 361,654 previously returned as missing.

On June 18th daily allowances were sanctioned to officers of from 3 f. 80 c. to 13 f., to N.C.O.'s of from 2 f. to 8 f. It was hoped that an eventual reduction in the terms of service might be made by more intensive training in schools. General Maudhuy suggested: (a) the formation of 3 classes, one under arms, two on leave but immediately available; (b) encouragement of voluntary enlistments by reserving certain Government posts for men of over 3 years' service.

GERMANY.

On April 6th, in consequence of German troops advancing into the Ruhr district, the French occupied Frankfort, Darmstadt, Hanau, etc. On the 11th a Belgian regiment was rallied to Frankfort.

On April 18th the French War Minister stated: A large number of battalions and batteries were retained, 12,000 guns admittedly so. 15,000 new aircraft had been constructed, many used in the Ruhr district, and more were building. The organisation of a new aerial force had been completed.

On April 19th the British War Secretary stated: 6,500 field guns, 2,500 field howitzers, 5,000 heavy guns and howitzers, plus 4,125 on the south and east fronts, 3,600 guns in fortifications were available for distribution. With their surrender, about 17,800 guns and tubes would have been handed over. It was estimated that there were 15,248 aircraft capable of being used for war purposes. All aircraft were being listed, and would be inspected.

On April 27th Paris reports stated: In November, 1919, three groups of regiments were supplied by Krupp's with No. 19 model artillery material made since the Armistice. The same firm had lately turned out a new light machine gun, and were now making a new 12-inch gun, provided with a silencer almost suppressing sound of the report. (In 1914 Krupp's employed 30,000 workmen. In April, 1920, the number was 48,000.)

On April 21st it was reported: There were still 100,000 of the old Army under arms; 60,000 of them in camps awaiting demobilisation, 20,000 guarding Russian prisoners, 20,000 repatriating other prisoners. In January, 1920, the Reichswehr numbered 350,000 picked men, very few over 30 years old. Nearly all the officers were Prussians. The Sicherheitspolizei were a reserve for the Reichswehr. On November 27th, 1919, the Reichswehr Ministry announced its "intention to utilise in the Sicherheitspolizei all officers of the active army who are obliged to leave the Reichswehr on August 1st, 1920, as a result of the diminution of the army." The Einwohnerwehr were practically a second reserve. On July 1st, 1919, the War Minister directed: "In case of necessity, the Einwohnerwehren will be incorporated in the Reichswehr." The Technische Hilfstruppen, 40,000 strong, were immediately available to suppress strikes in essential industries; the Zeitfreiwilligen bound to serve on emergency. Mobilisation plans had been formed. The Reichswehr would be doubled by calling up the Zeitfreiwilligen: and the Sicherheitspolizei by absorbing the Einwohnerwehr bring each Reichswehr brigade up to Army Corps strength. Germany could put 500,000 men in the field to-morrow. No honest attempt had been made to comply with the Peace Treaty clauses.

On May 4th the French War Minister gave the following supplementary information: The German Army consisted of (1) Reichswehr; (2) Übergangsheer

(Army of Transition), which should contain 200,000 men; (3) new Regular Army, organisation not yet decreed, which should contain 100,000 men. These were not yet distinct. They went towards forming the 14 brigades Reichswehr, 2 Naval brigades, and 14 Übergangsheer brigades existing, and numbered 13,000 officers, 63,000 N.C.O.s, 208,000 privates, total 284,000. (On April 1st 278,000 were budgeted for.) On March 1st the Sicherheitspolizei and Eihenwohnerwehr each numbered 120,000. The Freikorps, 20,000 to 40,000 strong, established at the time of the Revolution, had been generally absorbed in the Reichswehr. There were 50,000 Zeittfreiwillige, and independent units not under the orders of the Government, e.g., Baltic troops. Total at least 644,000. 8,705 field guns, over 3,290 gun barrels, 614 heavy guns, 1,841 heavy gun barrels, were to be surrendered. The German Government declared 2,500 guns had been destroyed. Verification of German artillery needs was proceeding.

On May 10th the employment in the Ruhr district of 20 battalions, 10 squadrons and 2 batteries was sanctioned.

On May 17th the French evacuated Frankfort, etc.

On May 20th General Nollet stated: Germany still possesses an incredible amount of war material. We have already destroyed thousands of guns, but there remain four or five times as many more to be dealt with.

About the same date the Chief of the German General Staff reported: 700,000 men were available against France, 300,000 against Poland.

On June 14th the British Premier said: the estimated strength of the German Army was 275,000. A German official report stated: (a) it had been reduced to 200,000; (b) orders had been given for the disbandment and disarmament of the Zeittfreiwilligen and Eihenwohnerwehr. These reports had not been checked [and were inaccurate]. 23,877 guns and tubes, 37,262 machine guns, 1,485,489 small arms, 106,063,000 rounds of ammunition had been notified as surrendered; 9,012, 4,002, 599, 980, 50,003,000 of each respectively had been destroyed.

On June 16th the British War Secretary said: At the Armistice Germany had 16 airships, 18,500 planes. None had been surrendered; but 700 planes, 3,000 aero engines destroyed. 60 planes had been manufactured.

POLAND AND UKRAINE.

Early in April the Bolsheviks were reinforced, and opened an offensive between Mozyr—Kalenhowicze with 17 divisions in line, 5 and 1 cavalry in reserve. It was repulsed with a loss of 2,000 prisoners, 22 guns. The Poles and Ukrainians advanced south of the Pripet, and by the end of the month occupied Jitomir, Berditcheff, Vinnitsa, Shmerinka, and other towns. By April 30th they captured Mohileff, and routed the 12th Bolshevik Army, taking 2,500 prisoners, 105 guns, etc. A Polish-Ukrainian agreement was made, which included Polish access to Odessa.

On May 7th Poles occupied Kieff. A few days later 7 aircraft were reported over the town, carrying German officers to the Bolshevik lines. On the 10th Ukrainian detachments entered Odessa, an attack on Kieff was repulsed. Another Bolshevik offensive began (a) astride Polotsk-Molodtcheno railway, on the Lepel salient; (b) over the Beresina towards Minsk; (c) between the Dnieper-Pripet. This was repulsed on the Beresina and held elsewhere. Severe fighting continued during the rest of the month.

On June 3rd a fresh Bolshevik offensive opened south of Kieff, Budenny's cavalry corps being reinforced by 1 infantry division. On the 12th Bolshevik cavalry cut Polish line, penetrating temporarily to Jitomir: strong Bolshevik force advanced from the north along the Dneiper. Poles evacuated Kieff, and

commenced an orderly retreat. On the 15th they recaptured Tsnarnobil (at the confluence of the Pripet and Dniester), and checked the enemy advance on the Dnieper. On the 20th they defeated the Bolshevik cavalry at Radomysl (60 miles west of Kieff). By 25th were back on their original line, west of Disna—Lepel—Borisoff—Bobruisk, west of Owrucl—Novgorod—Mohileff. By 30th Bolsheviks were within 40 miles of Rovno. Poles had regained line of the Slutch, and obtained other successes farther east.

The Polish retreat was caused by (a) lack of Ukranian support; (b) Bolshevik concentration.

SIBERIA.

On April 5th the Japanese occupied Vladivostock. Fighting followed at Nikolsk and Khabarovsk. By the 13th 13,000 Czechoslovaks had been repatriated, 6,000 were at sea, 17,000 at Vladivostock, and 17,000 being railed there. By the 25th all remaining Czechs, Serbs, Roumanians and Poles were at Vladivostock. On June 4th the Japanese occupied Nikolaevsk, which had suffered from Red excesses. It was announced at end of June that they proposed to evacuate Trans-Baikalia, but to continue in occupation of the maritime provinces.

TRANS-CASPIA—PERSIA.

On April 8th the Bolsheviks occupied Alexandrovsky (on the Caspian). On 28th, Baku, when 5 British officers, 26 ratings, fell into their hands. During the month they doubled the Orenburg-Tashkent railway, and prepared to extend it beyond Kushk (on the Afghan frontier). A withdrawal was reported from Krasnovodsk towards eastern Turkestan, where they had large forces, estimated by one account at 150,000, under General Kuropatkin.

On May 10th Bolsheviks from Astara (south of Baku) crossed the Persian frontier; and on the 16th another force occupied Enzeli (on the south shore of the Caspian), capturing General Denikin's late flotilla. A British force at Enzeli, composed of 400 Indian troops, retired to Resht. Captured documents made it clear that the movement was part of a plan for extending propaganda through Persia and Afghanistan.

Under the Persian Government were 8,000 South Persian Rifles, commanded by British officers, 8,000 Russian Cossacks, 8,400 Swedish Gendarmerie.

On June 4th the British detachment at Resht withdrew to the Menzil Pass (45 miles on the Kasvin road). The Bolsheviks occupied Resht. On the 15th the British detachment at Tabriz fell back to Zinjan (150 miles from Teheran). On 18th Bolsheviks and Kutchik Khan's Jangalis captured 800 Cossacks at Resht.

TURKEY.

Peace Terms.—On May 11th, at Paris, the Peace Terms were handed to the Turkish delegates. A month was allowed for their consideration. The military clauses were on the same lines as those presented to Germany, etc. A force was sanctioned of 35,000 Gendarmerie, 15,000 Reserve, 700 Bodyguard, with 2,500 officers. Recruiting to be on a voluntary, non-racial and non-religious basis; enlistment for not less than 12 consecutive years; officers to serve for 25 years, and not be retired under 45 years of age. No reserve of officers permitted. The stipulations as to aviation, war material, fortifications, etc., were as for Germany. Such prisoners of war as survived were to be immediately repatriated and their property returned. Allied Commissions of Enquiry to be formed. The administration of Palestine and Mesopotamia was handed over to Great Britain, of Syria

to France; Greece obtained Thrace, several Aegean islands and (practically) Smyrna. Turkey accepted local autonomy for Kurdistan and the freedom of Armenia and the Hedjaz. The Straits were placed under Allied control. The garrison of Constantinople was to consist of 700 Gendarmerie, plus police, 15 per cent. of the officers being non-Turkish. In case of trouble, Marshal Foch estimated 19 divisions (230,000 men) would be necessary: 4 divisions in Thrace, 2 in the Straits, 4 in Syria, 2 in Mesopotamia, 4 in Armenia, 3 elsewhere.

Operations.—May 24th, Nationalists defeated a Government force at Ada Bazaar (Anatolia). 25th, occupied Ada Bazaar, Anifieh Junction, on railway to Ismid, Yalova (30 miles from Sea of Marmora). They were estimated at 17,000 regulars, 19,500 irregulars, with 50,000 in support; 40,000 Allied troops were in Constantinople; 90,000 Greek (6 divisions) at Smyrna; 2,000 British at Batum.

June 1st, Greeks occupied part of Adrianople. Nationalist-French Armistice concluded for 20 days. 15th, Nationalist attack on British Indian detachment at Ismid repulsed. 16th, Ismid reinforced from Constantinople. 21st, raid near Guebze (on Constantinople—Ismid railway) repulsed. 22nd, Greeks advance from Smyrna, captured Akhissar (55 miles N.E.), Salikli (50 miles E.). 24th, Alashehr. 25th, Dardanelles forts destroyed. British marines landed at Mudania (port of Broussa); 28th, at Lapsaki (opposite Gallipoli). Greeks reinforced French at Kilid Bahr (N. shore of the Narrows). Greek advance reached line 8 miles N. of Soma (on Smyrna—Panderma railway)—8 miles E. of Alashehr—Keushk—the Cayster. 30th, Greeks captured Balikesri (100 miles N. of Smyrna). July 1st, Greek troops landed at Panderma. 2nd, joined up with Balikesri force at Amerkui (16 miles N. of Balikesri).

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NOTICES OF BOOKS.

History and Campaigns of the Rifle Brigade, Part 2. By Colonel Willoughby Verner. John Bale, Sons and Davidson, Ltd.

Some eight years have elapsed since Colonel Willoughby Verner published Part 1 of his incomparable record of his old regiment, which may indeed consider itself fortunate beyond most corps in that in these difficult days a second part of its history can be produced at all. The initial volume came to an end with the return to England of such portion of the 95th Rifles as had survived the hardships of the Corunna campaign, and though what follows in the volume now published is not a record of unbroken success, still the story of a campaign which begins with Bussaco and ends with Vitoria can hardly be said to be in any way dimmed even by the misfortunes attendant upon so ill-conceived and so badly conducted an expedition as that of Walcheren.

This new volume opens with a very interesting chapter on "The Development of Rifle Fire in the British Army from 1800 to 1815," describing many of the new rifle corps which during that stirring period were raised for the British service in this country, and in some of those possessions which past wars had secured for us; and telling us much about the many corps which fought for us either in our pay or among those nations allied to us. We are told also of the armament and uniform of these several corps, and learn of the genesis of the rifle.

For dealing with the battles, sieges and marches mentioned in this volume Colonel Willoughby Verner is especially well equipped. He has lived much and travelled widely in southern and central Spain. He has himself visited the majority of the places with which the name of the Rifle Brigade is so brilliantly associated, and he has been at pains to search among contemporary Spanish documents, and more particularly among old maps of the period, and is able to picture for us the face of the country and the aspect of the towns and villages as at that date these presented themselves to the generals and soldiers of Wellington's army. Especially useful to the historian is this particular familiarity in the case of Graham's action at Barrosa; many of those who before him have attempted to describe all that there took place have never visited the district, and where they have consulted old maps have read them incorrectly, but Colonel Willoughby Verner has surveyed and sketched much of the country in which the operations took place, is able to show to what extent the old Spanish maps may be followed and where they are hopelessly unreliable, and as a result he has practically reconstructed the battle for us. Further, the actual fighting is so described as to make it clear that the new *rifleman* was likely to exercise an important influence in the conduct of future battles.

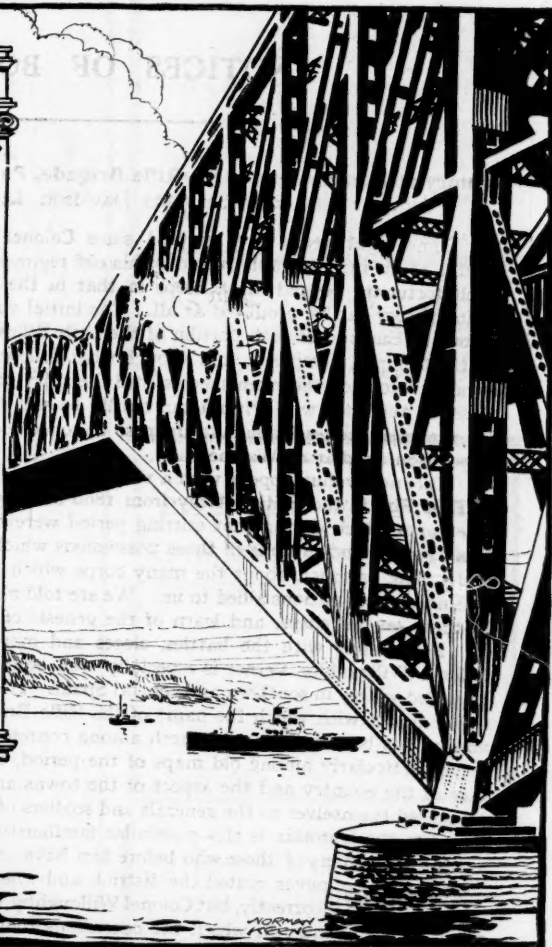
The author deals very clearly and fully with the succeeding operations; he has laid all possible sources of information under contribution, and has rescued from oblivion many points of regimental interest. His "History," when completed, is one that must appeal to old Rifle Brigade men. The book contains some six or eight illustrations, but of very special value are the maps—there are some fifteen of them—and it may confidently be stated that in this respect no regimental history of modern times has been so abundantly and so admirably supplied.

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